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Educational Standards and Volunteer Performance

LEROY FLINT, DIRECTOR
AKRON ART INSTITUTE

The question of whether or not it is possible to conduct in a small museum or art center an educational program of quality with the use of volunteers —and if so, how, is a thorny one. We have all heard argument on both sides. In practice it is apt to be an academic question, for most of us realize that if the smaller museum is to have a lively educational program at all much of it must be carried out by volunteers.

I cannot possibly answer "no" to the first part of that question without limiting all small institutions to programs no bigger or broader than can be directly carried by the staff alone. And some of us have a very small staff. Having therefore, of necessity, accepted the volunteer, we cannot afford to justify this acceptance merely as a necessary evil warranted by expanding statistics. A too easy acceptance of the obvious limitations is not a proper attitude.

It might be better to consider educational programs and standards first before defining the role of the volunteer.

I have a fear that history will record as one of the misfortunes of our time our almost complete lack of preparedness for the great surge of popular interest in the arts. I suspect that *Time, Life,* and *Fortune* have had more to do with this surge of interest and its general character than have schools, museums, and universities. To argue that it was easier for them to start the movement or to question its quality is begging the problem.

The fact remains that many of the smaller museums and art centers are really the products of the movement rather than its producers, and that the "new look" in all its variations recently characteristic of education departments and galleries in some of our larger museums is certainly also more symptomatic than causal. Our programs often seem to be an ex-

pedient and near-hysterical response to the demands of the movement rather than a thoughtful direction for it.

There is a tendency (natural enough, I suppose, but unfortunate) to consider what we are before what we are doing, and the smaller museums, which are usually economically dependent on broad public support, find themselves alternately catering to the lowest common denominators of popular appeal and imitating superficially the scholarly mannerisms of the larger and wealthier institutions.

When looking for standards for guidance, small museums naturally have looked to the large and successful ones. That could be a mistake. We seldom have space and never have staff or money to impress our visitors with a Picasso show. We cannot afford gimmicks and gadgets or guards. In an age of spectaculars we can look pretty silly attempting to effect a major production with ten paintings or, if we are a natural history museum, with a few listless birds and a stuffed squirrel.

Perhaps our proper function is to be personal and human, and to help people find a relationship with art and the various other things museums are concerned with, which will make the big museums seem less awesome for the average visitor.

It seems timely to consider a more pragmatic approach to the problem of standards and to look with more care at our end product in human experience. It is easy to agree that fundamentally it is our function to produce meaningful human experience and to assume that we are doing it. I will wager, however, that all of us have watched in one form or another, what in Kansas City they call a "snake tour" (that is, too many people moved too fast through a special exhibition) and wondered what it was meaning to its victims.

Some of us have even wondered (perhaps with certain guilt feelings) if reproductions that could be handled, sat on, and used, presented in an environment that also reproduced the appearance, feeling, and quality of a time and place, might not produce more satisfactory meanings than precious and fragile originals out of context in handsome but clinically unemotional cases. There are those who might say that some of the things Leslie Cheeck has done in Richmond are over-theatrical or "corny"—perhaps so, but I commend them to your second thoughts about what they might be doing to provide meaningful context.

We have all watched docents—volunteers or otherwise—carefully reciting carefully learned descriptions of color, texture, subject matter, names, dates, and places and wondered, I am sure, what it all meant to a listening group of fifth graders.

Groups differ in their preparedness and receptivity, and too few of us have tried to solve the problems this difference brings to presentation.

These are easy and familiar criticisms. Defining a good program is more

challenging. I would like to try to state some standards in terms of what a good program would or should *do*. What it contains will need to remain variable.

First, it would be geared to its community. Such a relation means it would avoid overlapping functions and competition with other facilities in the area and would provide strong supplemental support wherever possible to such related activities as exist. Energies would be channeled into areas of community need. As an example: In a community having a strong, active art program in its public schools, an art center might make its most valuable contribution by providing special opportunities for so-called gifted children, or devising activities to help the community develop its young people into intelligent appreciators of the arts. Gearing a program to the community that the museum serves should not mean catering to popular taste or demand. It should mean presenting a program related to the peculiar nature of the community and the people who live in it.

A college town is different from a small industrial city, and its people are different, with different needs. Its museum might be expected to be doing its job with methods and programs somewhat different from those used by a museum in a small industrial city.

Second, the program would be based on the concept that all "qualities" are products of relationships between people and environments or experiences and not necessarily inherent in the objects in the collections. It would eliminate barriers to the formation of good relationships by reducing so-called "psychological distances" and would be carried on in an atmosphere of friendliness and availability. It would avoid distracting side effects. Side effects are sometimes hard to control. For example, I have been watching visitors in the recently opened new section of the Cleveland Museum and am reminded of the saying of not seeing the forest for the trees. This is no criticism of the handsome building or the fine installations, but, until the novelty wears off a little, I suspect most people are going to have difficulty seeing the art for the nine million dollars.

Third, the program would place little reliance on stunts and gimmicks to attract attendance. There is small point in getting people in the museum if they come for the wrong reasons and go away confused. It would be outgoing and relaxed—not taking itself too seriously nor building on snob appeal or preciosity. It would provide social opportunities, and present its program with the friendly feeling of sharing something.

Fourth, it would present features appealing to all age groups in as many ways as feasible. The number and variety of programs presented would be related to the response or need of each group. It would have a particularly strong appeal to children, young people, and probably to

young parents. It would provide features designed for family consumption.

Finally, it would face squarely the fact that in installations and content its purpose is not to teach art, archeology, or history as such but rather to provide the opportunity and the means by which people might discover the evolutionary continuity of human culture and the relatedness in human purposes. It would accept the challenge of developing the basic social skills that lead to understanding and appreciation of, and participation in, our rich heritage and the cultural life of the present.

Having outlined some criteria for an educational program, I will now try to design a volunteer who can help carry it out. All of us have had good and bad experiences with volunteers, just as we have in other human relations. I suspect as a group they are more maligned than they deserve and that most bad experiences can be traced to three causes. Almost all volunteers are well intentioned. Unfortunately, they sometimes undertake assignments that have strong appeal but for which they do not recognize their lack of qualification. Coupled with careless or hurried interviews and improper training this mistake can produce calamitous results. The third cause (and of course the causes seldom occur singly in practice) is improper orientation and absorption of the volunteer into the organization.

The first step when beginning work with volunteers is: Select carefully. The best volunteer is a married woman, thirty to forty-five years old, with one or two children in school, and a husband in an executive position. She has attended exhibitions quite regularly for several years and has for some time brought her children to your classes and special events. She has some years of college education but is not always a graduate. She seldom has formal training related to her volunteer job but may have developed useful skills in other activities. She works well with her hands, likes people (especially children), and is at ease and talks easily with them. Most important—she has curiosity, imagination, and enthusiasm, and she believes in the importance of your organization to the community.

Once you have selected her, train her well so that she knows her job and can do it without being constantly watched and corrected. See that she knows why she is doing it. Be sure she knows that you do not expect or want her to be a mine of academic information. Explain that her job is primarily to help people discover interesting and exciting facts and relationships, and to find pleasure in the process. Teach her to communicate her own pleasure and discoveries. Leave her free to improvise in her own way. In her work with children she should be familiar with the public-school curriculum and be prepared to correlate what she is doing with it. In this area the communication of her own interest is infinitely more important than facts unattached to human feelings. She should be free to select her material in terms of her own interests and the interest of the group. The whole idea, of course, is to avoid the rote type of

performance, than which nothing can be deadlier. A limited, positive, and rewarding experience is of greater value as a stimulus to desire for further experience than an elaborate dull one, no matter how scholarly. Armed with accurate facts and good labeling and backed up with installations put together with imagination, a sense of the dramatic, and the needs of people in mind, the volunteer described above will do credit to any programs.

Finally, orient the volunteer to the organization. See that she knows and agrees with its philosophy and objectives and knows how her job fits into the picture. Give her responsibility by depending on her as you would a paid staff member. Give her staff privileges, include her in staff social life, and invite her to sit in staff conferences that relate to her job. Volunteers treated as professionals begin to respond with professional-like attitudes and in a small and busy organization this will result in improved performance by the volunteers.

The recommendations outlined above sound time-consuming and may seem terrifying to an already burdened small staff. It has been our experience, however, that they are well worth the effort and need not be a serious continuing problem after a nucleus of trained and oriented people has been achieved. We have such a group now doing almost all of the docent work with school children. They do their own scheduling of regular and special assignments, recruit new and replacement members, organize and conduct, with staff supervision, their own training programs, and arrange meetings with staff on special exhibitions. They have been operating for four years, and the only direct supervision needed now is for the annual and periodic training sessions plus the kind of spot checking normally done with paid personnel. Against that they have made it possible for us to handle thousands of children otherwise beyond our powers. They have given these children meaningful experiences with warmth and humanity.

The annual training period for new people is six weeks long and consists usually of twelve three-hour sessions. A new person then observes and acts as aid during several tours and is not urged to accept a teaching assignment on her own until she feels ready. On her first few solo assignments an experienced member of the group or a staff person observes and later discusses her performance, making necessary constructive suggestions. In addition to preparing for general tour work, each volunteer prepares for one or more areas of specialization. Such specialization makes it possible for the volunteer to give fuller treatment to particular interests on the part of some school groups. In addition they have proved useful in training new volunteers. In the coming years we are planning to begin extension services to schools in outlying communities with kits of material being sent out with volunteers. This is a new adventure for us, and we are

all looking forward to it.

Last, but not least, there is the obligation to recognize the contribution of the valuable volunteer and to show and express appreciation.

The most successful kind of recognition is, of course, that of inclusion as a staff member mentioned above, but some form of public recognition is also needed. In this direction avoid as a plague the formal and deadly meeting with a social worker speaker and an endless reading of names. This too easily degenerates into a form of lip service without conviction.

A friend—also with a smaller museum and knowing my topic—pointed out that almost anything I could say on the matter would be wishful thinking. I will not admit that the picture is as bad as that.

He is correct inasmuch as we are certainly not achieving all that I have outlined. The standards we hold, however, must be always enough ahead of us so that we continually strive for them. Standards that we merely maintain are already obsolete.

The Habitat Group

A. E. PARR, DIRECTOR

THE AMERICAN MUSEUM OF NATURAL HISTORY

Our natural history museums are the direct descendants of the curio cabinets of private collectors. In the early years of the public museums the family likeness was distressingly plain and unrelieved by any redeeming features. Our birds were mounted on uniform "T" perches in seried ranks on endless shelves, or "tastefully" arranged against backgrounds of fine woods competing with the specimens in quality and splendor.

A primitive forerunner of better things to come may perhaps be seen in the ornamental arrangements of birds on a bush that were popular in many early Victorian homes and soon found their way into the museums. It does not seem unreasonable to assume that contemplation of these decorative "conversation pieces" may have suggested the idea of the habitat group to many of the curators around the world, who seem to have recognized the possibilities of this kind of display more or less simultaneously and independently.

It would actually take very little to change the "conversation piece" into a habitat group. Substitute the two sexes and the young of a single species for the variety of often incompatible species on the same bush, add a nest on one of the branches, and you have an exhibit of the semi-habitat type that quickly led to the full-fledged habitat group.

The semi-habitat group does not attempt to create an illusion of the larger environment in which the animal lives. It simply reproduces a small, rectangular section of nature entirely removed from its normal surroundings. It is commonly open to view from three, or even from all four, sides and is often unaccompanied by any auxiliary material, except the label. Although pictures may be introduced as separate vehicles for additional information, the semi-habitat group uses no background painting to form an integrated whole with the foreground, and suggests no distances in any direction. This disregard for horizons and perspectives actually has some very significant advantages, quite apart from the economic ones. It

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permits the semi-habitat group to offer the intimate details of natural life for close and convenient inspection by the visitor. He does not have to bend, or look down, to learn about the turtle in the pond, or stretch his neck for a view of the swallows under the eaves. Although it represents a primitive stage in the evolution of habitat exhibits, the semi-habitat group therefore still remains an extremely useful type of museum display.

By themselves alone the semi-habitats did not offer enough variety of scale and of form of presentation to make more than a slight crack in the vast monotony of specimens on array, as early pictures show. Nevertheless, even the first semi-habitat groups required very little improvement to stand comparison with the best of their kind made today. What has been added over the years has usually been supplementary to, rather than part of, the semi-habitat itself. A modern example is the use of botanical semi-habitats together with actual soil sections, pictures of typical landscapes, and other items to illustrate the association between surface vegetation and underlying mineral foundations. The semi-habitat method also has great technical, as well as economic, advantages for the portrayal of greatly magnified segments of life in nature. The great dramatic impact of such enlarged microcosms adds to their educational value.

The dawn of a new era, already heralded by the semi-habitats, began with the introduction of the full-fledged habitat group. In the habitat group the museum tries not only to present the appearance of the species but also to tell as much as possible of its ways of life and its relationship to the environment. The educational success of the effort depends as much upon the cooperation of the animal as upon the knowledge of curators and the talents of artists. In order to make it possible to present a truly important segment of the life of a species within a few square feet of display, the species must itself concentrate the major events of its experience within a small area, preferably sharply focused upon a single center of attention. It is in dealing with the home builders that the habitat group has its greatest educational usefulness. In telling the story of the homeless roamers, the contribution of the habitat group is more important for the esthetic pleasure it gives than for the amount and significance of the information it adds to the display of the species.

Fig. 1. Specimens against a background of fine woods. The American Museum of Natural History.

Fig. 2. Ornamental arrangement. The American Museum of Natural History.

Fig. 3. The first semi-habitat groups scarcely broke the monotony of specimens on array. The former Synoptic Bird Hall of The American Museum of Natural History, now dismantled.

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 4. An early semi-habitat group. The American Museum of Natural History.

Fig. 5. The semi-habitat group still remains extremely useful. The American Museum of Natural History.

Fig. 6. Modern botanical semi-habitat group with accessory exhibits. The American Museum of Natural History.

It was logical that the habitat group should make its first appearance among our bird exhibits. Without violating the order of nature, we are able to present the entire family life of a bird within a few square feet. Nests, eggs, young of various ages, care of the young, division of labor between the adult sexes, and feeding habits can all be shown in a single exhibit of modest and therefore relatively economic size. By the logic of the initial choice of suitable subjects, with realistic limitations upon their scope, the earliest habitat groups actually achieved a maximum realization of the educational possibilities of the habitat method.

When the use of the habitat method was extended to mammals, the mere size of the beasts forced a tremendous increase in the dimensions of each exhibit, at the same time as the natural habits of these animals made it impossible to tell nearly as much about their life, even within an enlarged setting, except in the case of a few home builders such as the beaver. From the intimate habitat groups of bird life there thus evolved a somewhat different kind of exhibit which we may perhaps describe as "mammals with natural landscape."

A second change of focus took place when the dimensions introduced as virtues of necessity in mammals with landscapes subsequently came to be regarded as virtues in themselves for the planning of bird habitat groups of a later period. The intimate contact with family life in nature offered by the first bird habitats was often entirely lost in spectacular vistas.

Fig. 5

Fig. 6

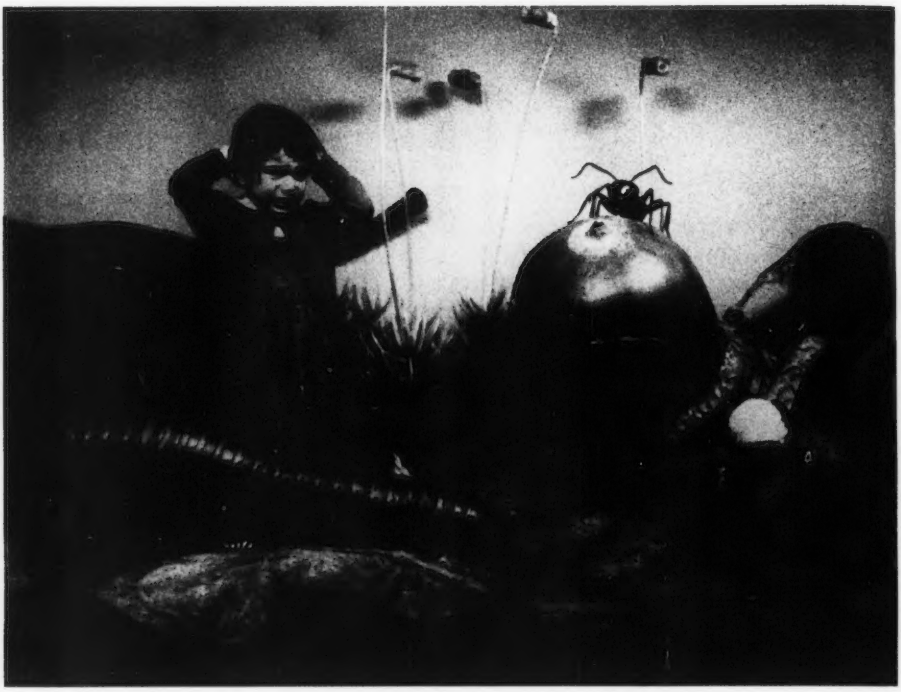


Fig. 7

Fig. 8

Fig. 9

Only the giant rookeries of colonial birds were capable of making a forceful impression against the panoramic perspectives of the new scale of display. Sometimes the birds have even become hard to find, and there are cases in which the most spectacular and interesting species are shown only in two-dimensional paintings, but not by specimens in the foreground. From their origin as exhibits of intimate life history, the bird habitat groups had evolved into geographic "landscapes with birds" of a rather different meaning and significance. In the intimate habitat group, and in mammals with landscapes, we try to present the natural habitat of a given species. In landscapes with birds we attempt to show the natural fauna of a given habitat. By comparison with the composite faunistic habitat,

Fig. 7. Semi-habitat presentations of enlarged microcosms combine educational value with dramatic impact. Life of the Forest Floor, Hall of North American Forests, The American Museum of Natural History.

Fig. 8. Early intimate bird habitat. Western Grebe. The American Museum of Natural History.

Fig. 9. Mammals with natural landscape. Black Rhinoceros Group, Akeley African Hall, The American Museum of Natural History.

Fig. 10. Simple faunistic habitat group from the Nile River. Akeley African Hall, The American Museum of Natural History.

Fig. 10

which will form the subject of a later section of this article, a landscape with birds may be described as a simple faunistic habitat exhibit, inasmuch as it portrays only a single actual location in nature, usually representative of only a single type of environment. Another example of a simple faunistic habitat group is shown in Figure 10.

The trend just described by three stages of evolution in one of the main lines of descent of the habitat group was accompanied by an interesting reorientation of artistic emphasis upon the various elements that make up the whole of each display. In the intimate habitat groups of bird life, the birds themselves are entirely dominant, along with other three-dimensional material in the foreground. The two-dimensional background painting generally plays a quite subordinate role in the total picture. In mammals with landscapes, the work of the background artist commonly attains the status of an equal co-feature of the entire exhibit. And in the final stage of this evolutionary sequence, represented by landscapes with birds, the background painting has achieved complete dominance, with specimens and foreground accessories distinctly secondary in visual importance.

The habitat groups, as we usually find them, are designed for maximum exposure through a glass front as high and as wide as space will permit, with the aim of creating an immediate impression at first glance across the distances of a hall. This is very effective, but it is also costly and physically restrictive in certain respects. It does not permit any major obstacles in the near foreground, even where nature would normally pro-

Fig. 12A

Fig. 12B

Fig. 11

vide them. A forest interior is, in most cases, shown as if seen from a small opening in the woods. It is costly, because it permits the visitor to get very close both to foreground material and to the forward-extending sides of the curved background painting. It also permits him to see the ceiling within the exhibit. This opportunity for close and broad inspection by the public creates an enormous demand for minute and meticulous detail in artistic execution.

An interesting application of the very opposite principle may be seen in Naturhistoriska Muséet, Göteborg. The habitats radiate from a small,

Fig. 11. Landscape with birds, a simple faunistic habitat. The American Museum of Natural History.

Fig. 12. Habitat group arrangement in Naturhistoriska Muséet, Göteborg, Sweden. A. Ground plan, visitors' alcove in center. B. Visitors viewing exhibits. C. One of the habitat groups.

Fig. 13

Fig. 14

almost completely dark, central hall into which the visitors enter. Each exhibit is viewed through a narrow opening, reminiscent of the shooting slots of old castles. As a result, the forward parts of the ground, ceiling, and side walls of the display do not come into view at all, although a bird in flight, a squirrel on a limb, or an insect on a flower may be brought quite close to the spectator at the window, whenever desired. Excellent illusions are obtained, without the exacting demands upon foreground minutiae created by a wide glass front.

A most serious difficulty of the habitat type of exhibit is its space requirements. In a landscape with birds many species can be shown, or hidden, but relatively little can be told about each. In the intimate habitat group a lot can be revealed, but only about a single or a very few species in each. Various modifications of the habitat method have been introduced in an effort to cover a greater diversity of animal life within reasonable limitations of space and funds. In the special situation habitat groups the

Fig. 13. A special situation habitat group. African Water-Hole. The American Museum of Natural History.

Fig. 14. Life-sized habitat group of wapiti in the Rocky Mountains. Hall of North American Mammals, The American Museum of Natural History.

Fig. 15. Miniature diorama of Rocky Mountains with wapiti. The Berkshire Museum, Pittsfield, Massachusetts.

Fig. 15

Fig. 16A *Fig. 16B*

museum takes advantage of the fact that common needs or inclinations may cause a wide variety of species to collect in very little space around some particular temporary or permanent feature of the environment. Ship follower and African water-hole exhibits are good examples. But again the question may be raised of whether a water-hole arrangement, apart from its stimulating beauty and vivacity, adds much to the display of the specimens beyond the information that all animals get thirsty in a dry country. Scavengers around a carcass are perhaps a little more informative, although less appealing.

Another solution for the space problems of the habitat group is offered by the miniature diorama. It is natural that these small-scale models should have found their first and greatest usefulness in the presentation of the big mammals that are the largest animals the museum has to contend with in its exhibition program. Although the miniature diorama fails to reveal many things that only a life-sized habitat group can show, it is not entirely without merits of its own quite apart from its economy of space and of funds. In the miniature diorama one can choose whatever scale is best suited to communicate a direct sense of the space relationships between the animal and the dimensions of the milieu in which it

roams. But no museum can afford to give anything less than a dominant role to a large mammal presented on a full scale in a regular habitat group. A comparison between Figures 14 and 15 will show both the over-all superiority of the life-sized habitat group and the special advantages of proportions and perspective that can be realized in a well-executed miniature diorama.

The composite faunistic habitat exhibit seems to have developed quite independently, and to have sprung into existence full grown, with the opening of Biologiska Muséet in Stockholm in 1893. The composite faunistic exhibits differ from the simple faunistic habitat groups by the fact that they do not attempt to present a panoramic vista of any particular landscape. Rather can they be described as a composite of numerous intimate habitat groups of a great variety of species and environments, synthetically assembled to form a continuous display, after the manner

continued on page 122

Fig. 16. Biologiska Muséet in Stockholm. A. View from lower level of observation tower. B. View of observation tower from exhibit.

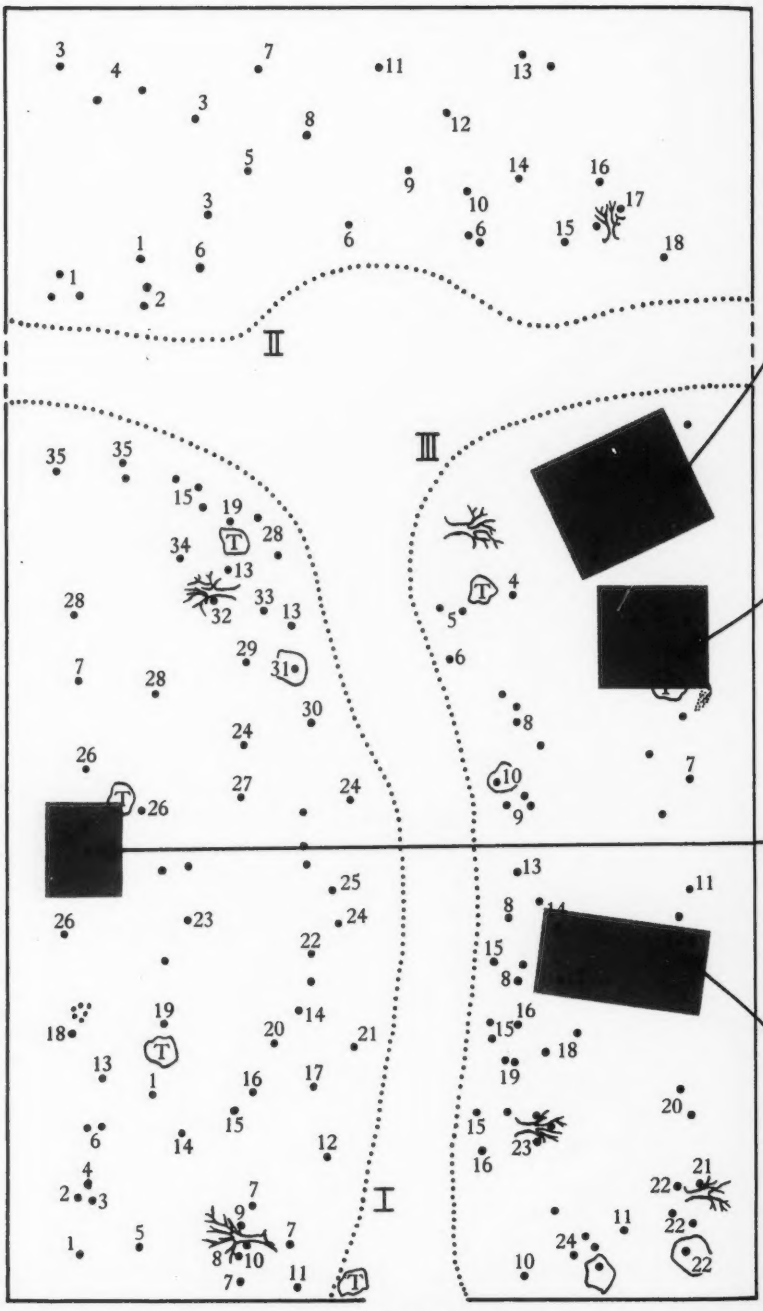


Fig. 17. East African Hall in the Musée du Duc d'Orléans, Muséum National d'Histoire Naturelle, Paris. Ground plan with details of four small areas to give impression of size.

in which a landscape architect plans a botanical "nature" garden. As in the intimate habitat group, background painting is comparatively subordinate and may even be non-existent.

In Biologiska Muséet an exhibit of approximately sixty by one hundred and ten feet surrounds a central observation tower in which the visitor can observe the display from two levels. The scene shifts as the eye follows the compass around, and all the most important land vertebrates of the entire Swedish fauna pass in review in reproductions of natural surroundings. A shelf attached to the observation tower between its two floors presents many of the smaller highland forms for closer foreground view from the upper level. Considering its size and quality, and the time at which it was created, Biologiska Muséet must be considered an impressive historical achievement, exciting to visit even today.

Other illustrations of composite faunistic habitat groups on the grand scale are found in the Musée du Duc d'Orléans in Paris. Figure 17 tries to convey an idea of the magnificent concept of these life-sized dioramas by

Fig. 18. Visitor in an alcove that extends into the exhibit. Olympic Forest, Hall of North American Forests, The American Museum of Natural History.

Fig. 19. Naturhistorisches Museum, Bern, Switzerland. A. Heron and pigeon exhibits. B. General view of continuous habitat display. Pigeons on the right in A can be seen in the rear through the heron exhibit at the left.

Fig. 19A

Fig. 18

Fig. 19B

the example of the East African exhibit, which fills a space nearly ninety by a hundred and eighty feet. A photograph of the entire exhibit is, unfortunately, not available, but the floor plan combined with the pictures of details in small sections may serve to demonstrate the character and dimensions of this display.

While the passing years are taking their toll of the great exhibits in Stockholm and Paris, the very exciting possibilities of a modern use of the composite faunistic display have generally been sadly neglected in our museums. It is to be hoped that the daring examples now available to us will not be retired but restored or replaced in the fullness of time.

An interesting feature of some of the major faunistic habitat arrangements is that they were the first, and remain, so far as I know, even to this day the only, displays of this type in which the vistor himself enters into the center of the exhibit to look out upon images of nature on all sides, instead of looking in upon the outdoors through a flat surface of glass. A not insignificant improvement upon this undesirable feeling of looking in upon nature from the outside may be achieved by permitting a slight incursion into the exhibit through the use of several panes of glass arranged to form an alcove for the visitor. But the ideal solution is still to be sought by placing the visitor entirely inside the exhibit by some future modification of the bold efforts of Biologiska Muséet and the Musée du Duc d'Orléans.

An interesting, ingenious, and effective modern hybrid between the composite faunistic exhibit and the intimate habitat group has been introduced in the Naturhistorisches Museum in Bern, Switzerland. Long and, for their length, very shallow exhibits have been set up as single units, each extending the length of a wall. There are no interior partitions. The background treatment is continuous. Foliage and other foreground accessories join and intermingle in uninterrupted sequence. But, instead of being fully exposed through a continuous glass front, each exhibit is concealed from broad, general view behind a curtain wall, with a series of glass openings of modest size, each framing an intimate glimpse of a member of the general fauna in a natural setting. Although the spectator can see only small sections at a time, he is constantly and pleasantly aware of the continuity and spaciousness of the greater whole. The vague sense of confinement which the very dimensions of a small, separately enclosed habitat group tend to instill, regardless of the quality of execution, is notably lacking or reduced. In addition to being very economical, this arrangement of exhibits in open, interior continuity is both esthetically and educationally very successful.

The systematic pseudo-habitat is a lateral descendant of the habitat group that may trace its ancestry from several sources. It combines in a decorative, pseudo-natural setting more or less closely related species in-

Fig. 20

Fig. 21

habiting different geographic regions and therefore never found together in nature. The setting can convey information only of the broadest general nature, such as whether we are dealing with birds of the trees and forests, or birds of the grasslands or seashore. But its esthetic value may add greatly to the attraction of an otherwise purely systematic exhibit. When recently re-introduced in The American Museum of Natural History it was explicitly proposed as a three-dimensional modern version of the beautiful color plates of nineteenth century works on nature, in which many different species were often similarly assembled in an entirely artificial way. The systematic pseudo-habitat can, obviously, also be viewed as a new edition of the original, decorative curio cabinet, or as a simplified derivative of the composite faunistic habitat.

The presentation of some significant feature of the environment in a pseudo-habitat display may take a very abstract or highly conventionalized form, without loss of meaning, as in the very attractive new installation of hummingbirds in the British Museum shown in Figure 21.

The special situation habitats mentioned above are, in a sense, ecological, in that they take advantage of some particular element of ecology to achieve the concentration of species in space that is desired. They are therefore closely related to the last unit in our series, the ecological habitat.

Fig. 20. A systematic pseudo-habitat. Birds of paradise. The American Museum of Natural History.

Fig. 21. A systematic pseudo-habitat. Hummingbirds. British Museum (Natural History).

But before dealing with the ecological habitat group, which also has direct affinities to landscapes with animals as well as faunistic habitats, it may be of interest to mention an important change in technique of presentation that makes its appearance at this point.

In all the types of habitat exhibits discussed in the preceding, there is a sharp distinction and division between background and foreground treatment. The foreground includes everything in front of the background painting, such as snow and ice, rocks, plant life, and zoological specimens. Everything in the foreground is normally on full natural scale, and in three dimensions, although some successful faking with two-dimensional material in the posterior foreground can be done. The application of perspective does not begin until we reach the entirely two-dimensional background, and is then rendered as "natural" perspective. Our artists have become masters at concealing the discrepancy so that it will not be noticed by our visitors.

In the ecological habitat group we wish to deal not merely with a very temporary gathering of animals in a special situation, but with their typical

Fig. 22. Ecological habitat group. From seashore to meadow. Peabody Museum of Natural History, Yale University.

Fig. 23. Ecological habitat group. Redwood forest, Hall of North American Forests, The American Museum of Natural History. A. Detail. B. Full view.

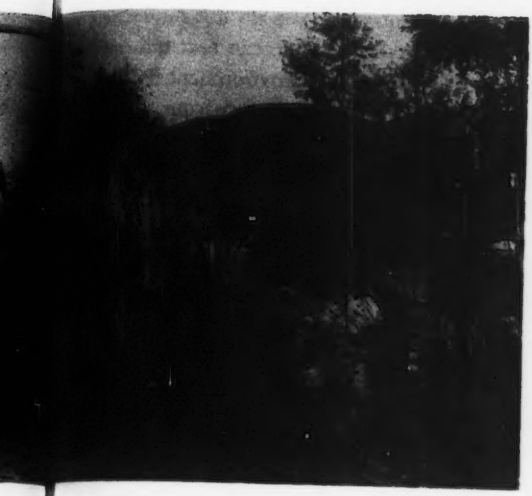


Fig. 22

Fig. 23A

Fig. 23B

life within the normal range of their environment. We do not have the advantage of tremendous concentration. In addition, we can best tell our story by direct comparison between different types of environment within the same exhibit, as, for instance, by showing the transition from sandy seashore to salt marsh to fresh or dry meadowland. We need to create a convincing illusion of much greater space than we actually have, also in the foreground.

One of the first attempts to achieve such an effect, and a very successful one, has been carried out in the Peabody Museum at Yale University by the use of a very forced perspective in the background painting, which carried the illusion forward to the foreground without foreshortening of the three-dimensional material. In this case it was an illusion of horizontal width that was desired to span the distance from seashore to farmland.

In The American Museum of Natural History we have just completed an exhibit in which an illusion of height was required to create a picture of natural conditions in a giant redwood forest. For this purpose a forced perspective has been applied all the way from the opening through which the visitor sees the display, through the three-dimensional material of the "foreground," to the two-dimensional background painting. Three-dimensional models of tree trunks, ground-cover ferns, and human forms have been introduced on a diminishing scale towards the rear by rigid calculations of perspective.

With forced perspective in a two-dimensional background and the application to the three-dimensional foreground of principles of perspective, derived from two-dimensional traditions of rendering, already accomplished, there remains the challenge of achieving final and complete integration by introducing a foreshortened, but actual third dimension in the background itself. Certain quite effective devices used in commercial advertising offer promise that even this may soon be achieved.

II/2 1959

The Designing of Purposeful Photographic Shows

CYRUS TOWNSEND BRADY, JR.

In recent years the displaying of temporary photographic exhibits has become a general practice of museums, galleries, and libraries all over the world. Naturally, any exhibition in cultural institutions is expected to serve some educational or esthetic purpose, be it commemorative or current, comprehensive or restricted, in content and scope. But quite often a secondary purpose, a definite intention to induce some predetermined response in the minds of the spectators, underlies the conception of the exhibit. It is to this sort that the term "purposeful" is here applied.

Now, almost all photographic shows can be broadly classified either as evocative or documentary and it is in this latter class that purposeful shows are usually conceived. Primarily their designing must satisfy the same intellectual and artistic criteria as for well-balanced, informative documentaries. Simultaneously, however, the complication of their underlying purposes must be resolved, and it was the question of how best to do it that originally prompted this study of the whole problem. For, indeed, much of the ensuing discussion is equally pertinent to almost any sort of pictorial exhibit.

The underlying purpose may be a frankly avowed argumentative one, as in the present author's "Men of One Mind—Patterns in Primitive Art Throughout the World," first shown in the Corner Gallery of The American Museum of Natural History. Or it may be more subtly persuasive, as was the intention of his "World Air Tour" for Australian galleries. Or, again, it may be described as connotatively suggestive (to avoid the invidious implications of "propaganda"), as was his "Photographic Stroll Through the Three Americas," shown during World War II in many cities of Argentina and, duly revised, in Brazil. Explanations of each of these, taken as types, are developed in the examples cited below.

At the outset let it be understood that the present paper is a formulation of observations and experiences of one exhibitor and his advisory committees with these and other sorts of exhibits since the war. Its conclusions are offered rather as propositions to be assessed by fellow exhibitors than as possessing universal validity. In particular, the categorical and numerical "should's" and "must's" are laid down not as hard-and-fast rules but merely as pointers that assist preliminary planning.

Here, then, are the conclusions.

RESEARCH

No opportunity should be neglected to study comparable pictorial shows, both for subject and presentation, and especially as to the public's response. Press notices, and what is stressed therein, are often telling indications of that response. Even more so is its direct observation by the exhibitor himself at one of his own shows. He should visit it frequently, at odd hours, and while standing inconspicuously aside should scrutinize the behavior and attitude of the spectators in the presence of this and that feature, and of the whole. His ears, too, should be alertly open.

INTEREST

He will perceive, of course, that a successful show appeals through both its subject and its intrinsic charm. Its title will succinctly identify the subject and be so thoughtfully phrased that the associations or the promises it awakens in the visitor's mind are as stimulating as the title of a book; and if the exhibit be subdivided into organic groups the subtitle of each group will be analogous to a chapter head.

For the title "Men of One Mind," the Biblical expression was adopted as an intimation of its thesis and in the hope that it would predispose the spectator to agree that all men everywhere and at all times have been moved to express in art their deepest sentiments and remarkably often in much the same manner. The "Photographic Stroll Through the Three Americas" was so entitled because to most Latin Americans there are three distinct Americas—South, Central, and North—no one of them having any monopoly on the name. Furthermore, this title tends to equate them and was meant to do so.

Before any inherent charm can exert its influence, the show must draw attention to itself. Some of the pictures (usually large ones) must be veritable "eye-catchers" which will arrest a casual spectator and lead him to examine others nearby. These eye-catchers should appeal rather to men than to women. Ungracious as it may sound to say so, women, as a rule and unless they are in some way concerned by it, take much less interest in a photographic exhibit than men (an observation verified in three continents), and frequently a wife will stand and wait, patiently but with

her thoughts elsewhere, while her husband is inspecting something that is meaningful to him.

SIZE OF EXHIBIT

The comparison with the titles of books holds also with respect to the over-all size of the exhibit. A good deal of experience confirms the fact that one having between fifty and sixty sheets can attract the most serious attention. It will then correspond to a book written to popularize the same subject. It is an "optimum" size, for a much greater number will burden the memory and attention too severely or simply become boring. If fewer, the treatment is apt to be too condensed for thoroughness.

However, provided that the theme is limited to a specialized aspect of a wider subject, an exhibit of no more than twenty-five or thirty pictures can be designed to correspond to a monograph or a substantive lecture to a society.

SIZE OF SHEETS

Many American galleries and museums are equipped with glasses and holding devices for standard sixteen by twenty mounts and for larger ones of twenty by twenty-four or twenty by thirty. In other countries approximately the same sizes are customary. Moreover they prove very tractable in use, about eighty or eighty-five per cent of a typical exhibit being of the sixteen by twenty size, and the remainder of the larger sizes.

Most of the sheets of the standard and the larger size should carry a single print, conventionally of eleven by fourteen on the standard mount and of at least double that area on the larger ones. However, some sheets of both the standard and the larger sizes can conveniently carry two related prints (say, two of eight by ten on the standard mount), while on a few sheets it will be distinctly beneficial to gather together a number of still smaller ones. Prints thus mounted in close proximity to one another will surprisingly reveal or emphasize innate similarities or contrasts.

SELECTION OF MATERIALS

Obviously a subject should be presented accurately and covered comprehensively and in due proportion.

Occasionally, for the sake of accuracy, an unattractive photograph, or one of poorer quality but that bears directly on the subject, will have to be preferred to a more beautiful one that is only indirectly illustrative. Compensation must then be sought in more appealing photographs placed adjacent to it or by the use of "vignettes" (see sheet details below) or the like.

When one's own photographs are insufficient in scope, comprehensive

coverage can readily be obtained through the "additions" mentioned in the next paragraph, or sometimes by borrowing finished photographs from others. Such borrowing is acceptable up to a reasonable percentage of the total. However, it is *infra dig* to photograph a photograph or a half-tone.

DIVERSIFICATION

An exhibit consisting solely of photographs risks being monotonous, even if it contains both black-and-white and colored prints. Spectators invariably appreciate variety; hence quite apart from any gain in comprehensiveness or proportion it is highly desirable to include, say, five to ten per cent of "additions." These may be old lithographs or engravings, drawings or paintings, textiles or woven mats, or posters or handbills, provided they are truly appropriate and of suitable size.

For example, a photograph of a lithographic illustration in an old octavo or duodecimo book, blown up to double size, is often as charming as an original wash drawing or water color. The exhibitor's vanity may suffer when he notes the spectators taking more interest in such things than in his handiwork, but it is a tribute to his breadth of vision!

Objects in the round, metallic or ceramic, sculpture, basketry, and so on, are also at times helpful additions. In many cases a good (and decorative) map showing a route or the particular region of the show is well-nigh indispensable.

COMPOSITION

This is a very complex task. As in any work of art, each step in the composition must be correlated with all the factors of theme, purpose, proportion, and congruity, and those of form, size, position, impact, and the rest. Above all, the composition must be logically and artistically consistent and coherent. Ideally, for example, it would be just as disturbing to hang Sheet No. 17 before No. 16 as for Chapter 17 of a book to be printed before Chapter 16.

Furthermore, the educational background and the contemporary tastes of the presumed spectators must be consulted at each of the steps. Such a reference may suggest changes, usually minor ones and often only in the ordering of the sheets, for different cities in the same country. Similarly, the title may change; "World Air Tour" was subtitled "Melbourne to Melbourne" for the showing in that city but was altered correspondingly for other cities.

If the exhibit is to travel to different countries, more drastic changes may be advisable. When "Men of One Mind" was displayed in the United States, Australian aboriginal art made up several sheets, but these were largely replaced by American Indian motifs when the exhibit was sent to Australia. This shift seemed to win approval and is in line with the pro-

nounced Australian partiality towards things American in general.

That same attitude was taken advantage of in the composition of "World Air Tour," which was primarily a sixty-sheet tour around the Southern Hemisphere. Now, the average Australian has little knowledge of Latin American culture, so that the secondary purpose of the show was to persuade him to honor its worth. This strongly influenced the choice of photographs, drawings, and so on of the Latin American countries and also the route to be followed. Although flights across the South Pacific have been pioneered by Australian aviators, no regular service has yet been established. But fortunately by going first to the Northern Hemisphere, "We could," as the Foreword put it, "conveniently visit some of the principal cities of the United States and they would help us form standards of comparison." Naturally, these "standards of comparison" were selected with this same persuasion in mind.

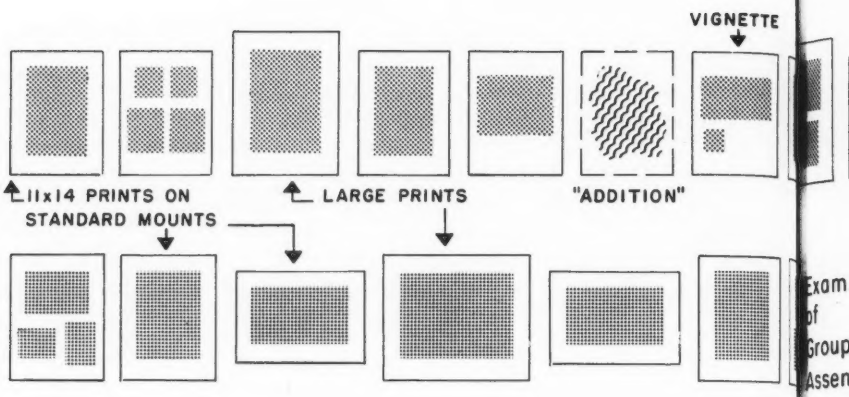
This purpose was not very different from that which inspired the committee for whom the "Photographic Stroll," also of sixty sheets, was composed. They wished it to suggest an "essential unity of the Western Hemisphere in social, political and cultural ideals, regardless of diversity of origin and historical evolution." Incidentally, it was to combat erroneous notions about life in the United States, common enough among Latin Americans in those days, such as the slur that New York was "Godless."

The route was from south to north, and the United States was to be reached just before Canada, the twenty-second and last American country. Accordingly Sheet No. 58 was made the emotional climax of the exhibit. It showed the west face of the Cross in the close of Trinity Church, at the head of Wall Street, at lunchtime in summer. Several of the preceding sheets of the twenty Latin countries were intentionally preparatory to the Cross and especially to the west face on which are represented the Virgin and Child. So as not to come too abruptly to the end thereafter, No. 59 was a familiar scene in New Orleans, and No. 60, one in Canada, both of which had Latin associations.

SHEET DETAILS

Standard mounts facilitate handling and also enhance the appearance of individual sheets as well as of their assembly. An eleven-by-fourteen print on a sixteen-by-twenty mount appears to be practically as large on the wall as does a sixteen-by-twenty print without a margin.

That margin can serve in other ways. An arrow, in contrasting color, running in from it can particularize a small but important point in the print. If only a black-and-white print is available of some scene that cries for color, a tape of the appropriate color may be fastened down around the print as a border, and the spectator's eye will carry the color into the print—an especially effective device for eye-catchers. If the photograph



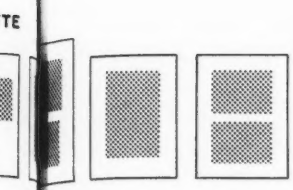
lacks a striking "point of interest"—for example, a battlefield without warriors, a prairie without animals, an historic site or building without the characters who made it famous—a smaller print, perhaps reproducing some old woodcut, can be placed next to it as a "vignette," and the spectator's eye will insert it where it is needed.

Although some museums prefer to type labels on separate cards and hang them under or beside the sheets, others prefer labels affixed to suitable spaces on the margins. Other opportunities for profiting by margins are constantly arising. They turn out to be much more than empty expanses of cardboard.

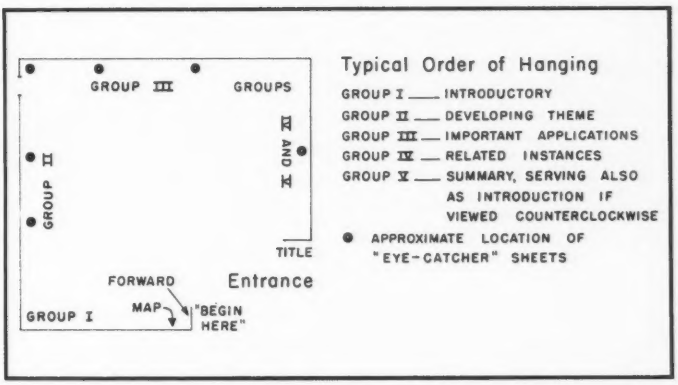
FOREWORDS AND LABELS

Writing and the making of pictures are cognate arts. Forewords should be envisaged as integral parts of exhibits. They are usually printed on cards in fairly large type and placed at the beginning of the exhibits, but in some circumstances they are printed in program leaflets. In either form they should concisely declare the primary, and imply the secondary, purposes of the shows, and also answer such questions as "when," "where," and "who."

The wording of labels is a real challenge to literary craftsmanship. Many museum officials urge brevity and assert, "Nobody reads them anyhow." No matter how brief, however, they should tell where the photograph was made or whence came the reproduction. Yet some visitors do have sensitive minds and do read them. Here is their principal value: the opportunity for imaginative phrasing which will interpret or extend the content of the print. Thus, in "World Air Tour," one sheet showed a Latin



Examples of Group Assembly



American doorway on which the date 1585 was conspicuously carved. The label read, "Shakespeare Came to London," and in smaller type, "Doorway in Bogota, Colombia."

For argumentative shows, the labels must avoid anything so defiantly controversial as to invite rebuttal, and for connotatively suggestive ones should discreetly orient the connotations. On the other hand, for the short "monographic" exhibits labels must often be longer and less stylistic in wording than those for full-sized ones.

ORDER OF HANGING

A typical, full-sized exhibit would comprise a title, and perhaps group subtitles, a foreword, a map, any objects in the round, and the following sixty sheets:

	On standard mounts	*On larger mounts*
With a single print	34	6
With two or more prints	13	3
Diversifying additions	3	1
Total	50	10

The variety of sheets increases exhibition possibilities. As they hang in order, the pattern of their assembly is pleasing in itself. Although most of the sheets hang vertically, a few are sometimes mounted for horizontal hanging, to enhance the pleasure in the design of the whole. Juxtaposition of the single-print sheets and those with several smaller prints produces an illusion of motion to the spectator, as he steps back, or comes nearer, the better to bring them to focus.

This assumes that he is inspecting them in order, commencing at the

beginning and following through to the end. Alas, many visitors, especially casual ones, fail to do so, and almost wilfully! In some galleries with wide entrances, a railing is erected across all but a narrow portion, and large arrows are set to guide the visitor clockwise. Such a barrier in a diagonal entrance might confuse or repel visitors who approach it from either side. The design for displays should therefore be intelligible whether observed backward or forward, which is a formidable undertaking, for which specific rules are not to be set. Should there be two copies of the foreword? Or one in the middle?

SUMMARY

It takes just about the same expenditure of creative energy and as much laborious effort to design and construct a full-sized and purposeful photographic exhibit as to write a 200- or 300-page book. Such a task may discourage less ambitious aspirants, but it will illuminate the path of the more resolute.

II/2 1959

The Paleozoic Museum in Central Park, or the Museum that Never Was

EDWIN H. COLBERT, CURATOR OF FOSSIL AMPHIBIANS AND REPTILES, AND KATHARINE BENEKER, ASSISTANT AND IN CHARGE OF TEMPORARY EXHIBITS
OFFICE OF EXHIBITION AND CONSTRUCTION
THE AMERICAN MUSEUM OF NATURAL HISTORY

This is the all but unknown story of a museum that was started but never finished, of a museum that was to have been one of the wonders of New York, of a museum that had its origin in big thoughts and big plans, and then came to a sad and undistinguished end. It is the story of events that took place in the bumptiously growing city of New York almost a century ago, and that had their beginnings before that in early Victorian England, where primitive museums were in the initial stages of their development, and where the natural sciences, so intimately associated with the growth of museums, were young, groping disciplines of facts, techniques, and theories.

Back in the first three or four decades of the nineteenth century, the pioneer paleontologists of England and France were beginning to get some glimmering views of what the world might have been like long ages ago, before there were any men. The bones of dinosaurs and of other ancient reptiles contemporaneous with the dinosaurs had been discovered and described. It was becoming quite evident to the scientists of that day, and to a considerable segment of the educated public, that the world had in past ages been inhabited by great animals quite unlike any of the living animals with which they were familiar. To many people these newly discovered vistas of an ancient world were wonderful to contemplate.

In England, during the middle years of the century, a bold and imaginative plan was developed and carried through to completion, whereby

various great animals that had once lived upon the earth—dinosaurs and ichthyosaurs and many other extinct beasts—were displayed as life-sized restorations among the verdure of the grounds of the famous Crystal Palace at Sydenham, then on the outskirts of London. These restorations were modeled with commendable skill by a sculptor with the improbable name of Waterhouse Hawkins, and they were done under the direct supervision of Sir Richard Owen, the great English anatomist and paleontologist and the first director of the natural history division of the British Museum. Considering the knowledge available at that time, these models were remarkably good. They are still standing, and the atomic-age visitor to Sydenham can see them looming up among the shrubs and the trees, often with startling and realistic effect.

London had a Crystal Palace and New York had a Crystal Palace, but London had dinosaurs and New York had none, and here the story of the Paleozoic Museum in Central Park begins.

Not long after the Civil War, Waterhouse Hawkins came to America. His presence in this country soon came to the attention of the "Commissioners of the Central Park," which was the first governing board for the Park, and these gentlemen decided that advantage should be taken of the obvious talents of Mr. Hawkins. Consequently, on May 2, 1868, Mr. Hawkins received the following letter from Andrew H. Green, the Comptroller of the Park.

Dear Sir:

Recognizing the interest that has long attended your restorations of the forms of extinct animals in Europe, the Commissioners of the Central Park have thought that a similar work in the direction of reconstituting the phenomena of the ancient epochs of this continent would be of equal scientific value, and of especial interest in an educational point of view.

The admitted advantages of an exhibition of a rehabilitated animal over one showing the mere remains of its fossil frame, are not to be questioned; and as this improved method of bringing before us creatures of a past age is chiefly due to your skill and scientific labors, the Commissioners of the Park are desirous to make at least a commencement in this direction, if they can feel assured of your cooperating interest, and supervising skill and advice.

Fig. 1. Some of the life-sized models constructed by Waterhouse Hawkins at Sydenham as they appear today. These are intended to represent the lower Cretaceous dinosaur Iguanodon, *and, although quite incorrect as reconstructions of this dinosaur, they are none the less life-like and effective. They are painted in colors that are intended to duplicate the hues that might have been typical of ancient Mesozoic reptiles.*

Fig. 2. Another example of work by Waterhouse Hawkins at Sydenham: two Mesozoic crocodilians, remarkably well done even by modern standards.

Fig. 1

Fig. 2

It gives me great pleasure in their behalf to propose to you to undertake the resuscitation of a group of animals of the former periods of the American continent.

Should your engagements be such as to admit of your entering upon this work, that will so well supplement your previous achievements in the same department, I think I may promise you the sympathy and support of the scientific men of this country, and that museums and collections of fossil treasures, public and private, will be freely opened for such examinations as you may desire to make in the prosecution of this interesting undertaking.

With great respect,
ANDW. H. GREEN,
Comptroller of the Park[1]

Waterhouse Hawkins was obviously and quite naturally delighted with the offer, and he replied to Mr. Green's proposal as follows.

Dear Sir:

I have received your favor of May 2d, proposing on behalf of the Commissioners of the Central Park of New York, the restoration of a group of ancient fossil animals in the grounds under their control, where art has already accomplished so much for public pleasure and improvement.

The interest in the remains of ancient animal life which Geology has revealed within the last century is world wide, and almost romantic in its influence upon the imagination, and I quite agree with you that there can hardly be a question as to the advantage of representing these remains, clothed in the forms which science now ventures to define.

The restorations which were committed to my charge in the Crystal Palace Park at Sydenham, were the first efforts of the kind ever attempted, and their acknowledged success, both in commanding the cordial approval of scientific men, and also a large measure of public appreciation, encourages me to hope that a similar enterprise may meet with equal favor on this side of the Atlantic.

In regard to the educational value of those restorations to which you are pleased to refer, I would say, that if it was marked and most decisive in England, notwithstanding that their situation was several miles from London, where they were only accessible through a charge for admission, it may be assumed that the benefits will be greatly enhanced, where the animals, conspicuously placed in your grand Park, would be freely open to all. Nor do I fail to recognize the eminent advantages which result from that higher condition of popular intelligence for which this country is pre-eminently distinguished.

Your kind intimation that I may expect the favor and sympathy of the scientific men of the United States in carrying out this work is very gratifying to me, as I came among you a stranger scarcely expecting to resume my former labors, under such auspicious circumstances, in a foreign country, while my experience of the most hospitable kindness, and a general interest manifested in those subjects to which I have devoted my life, confirms your assurance that

[1] Twelfth Annual Report of the Board of Commissioners of the Central Park, 1868, pp. 132–133. Subsequent quotations included in the present account are taken from the Twelfth (1868) and Thirteenth (1869) Annual Reports and the Report of the Board of Commissioners of the Department of Public Parks published in 1871; they are by date and page number only.

the aid and support I so greatly need will be generously accorded.

Sincerely appreciating this flattering evidence of your confidence, I accept the proposal, and am prepared to enter at once upon the preliminary steps of the undertaking.

With the highest consideration,

I am dear sir,
Yours faithfully,
B. WATERHOUSE HAWKINS[2]

No time was lost in getting the project under way. Hawkins accepted the proposal on the ninth of May, 1868, and on the eighteenth he was engaged by the Park Commission and immediately began his plans for the reconstructions. He consulted with the Commissioners, and there was a joint decision that Mr. Hawkins "should attempt to reproduce the original forms of life inhabiting the great Continent of America, rather than repeat the European forms that had been already illustrated in the Palace Park at Sydenham, in England" (1868, p. 135). To this end Hawkins spent the summer and the autumn months of that year studying fossils at the United States National Museum in Washington, the Academy of Natural Sciences of Philadelphia, the museum at Yale University, and at several other institutions. He was doing the necessary spadework, and from all accounts it appears that his labors were unbelievably strenuous and sustained. How he got through what he did during those months—studying fossil bones, measuring them, cleaning many of them from the rock matrix in which they were enveloped, making casts, modeling missing bones, and the like—is something to make a modern museologist pause in respectful admiration. He must truly have been a Victorian Hercules performing prodigious labors with fossils, plaster, and clay. At any rate, within the course of a half year or so he had completed an impressive amount of preliminary work and study and was ready to start on his appointed task of making the full-sized restorations.

Hawkins' enthusiasm for his chosen endeavor and his devoted labors were infectious. So we find the Commissioners in 1868 singing the praises of paleontology in glowing terms.

> Another branch of Natural History of almost romantic interest, is that of the forms of life that once inhabited the earth, but are now extinct. For thousands of years men have dwelt upon the earth without even suspecting that it was a mighty tomb of animated races that once flourished upon it as the living tribes do now. Only in very recent times, which men still remember, was the discovery made that the earth has had a vast antiquity; that it has teemed with life for countless ages, and that generations of the most gigantic and extraordinary creatures lived through long geological periods, and were succeeded by other kinds of creatures equally colossal and equally strange. Huge fishes, enormous birds, monstrous reptiles, and ponderous uncouth mammals had possession of a

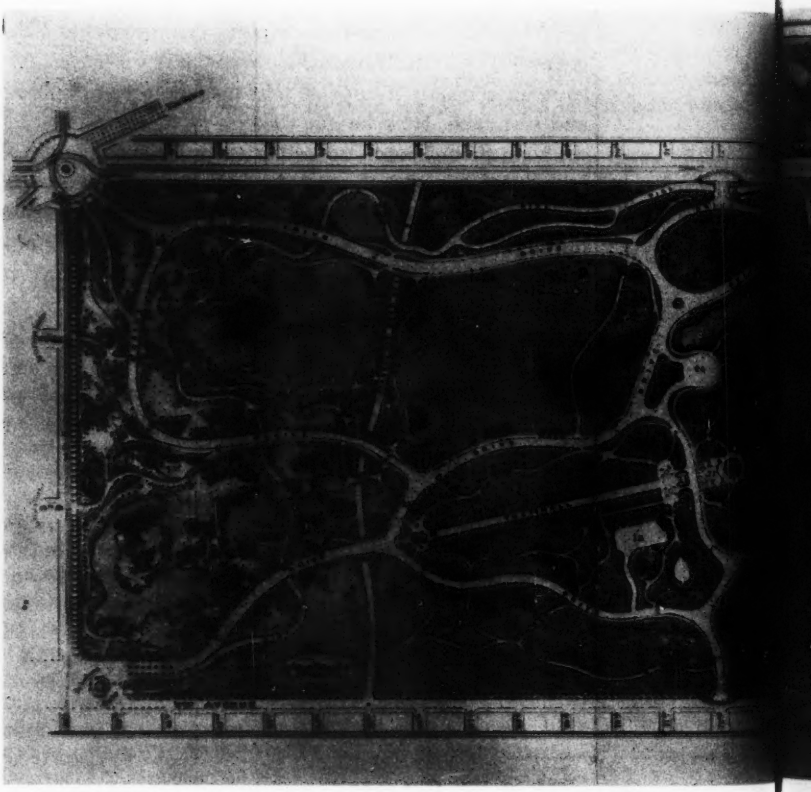
[2] 1868, pp. 133–134.

world, in which man, if there, had not yet established a record of his pre-eminence. The vestiges of these creatures are still found in the rocks. Their fossil skeletons have been exhumed, and in the light of modern science their diversities have been determined. They are all found to be but varieties of existing forms, but manifestations of the present and all-pervading plan (1868, p. 129).

Fig. 3. A map of the south portion of Central Park as it was planned in 1868. Note the square marked "Central Park" on the west side of Eighth Avenue. This was to become the site of The American Museum of Natural History. From a report of the Central Park Commission.

Fig. 4. An enlargement of the map shown in Fig. 3, showing the location of the Paleozoic Museum opposite Sixty-third Street.

Fig. 3

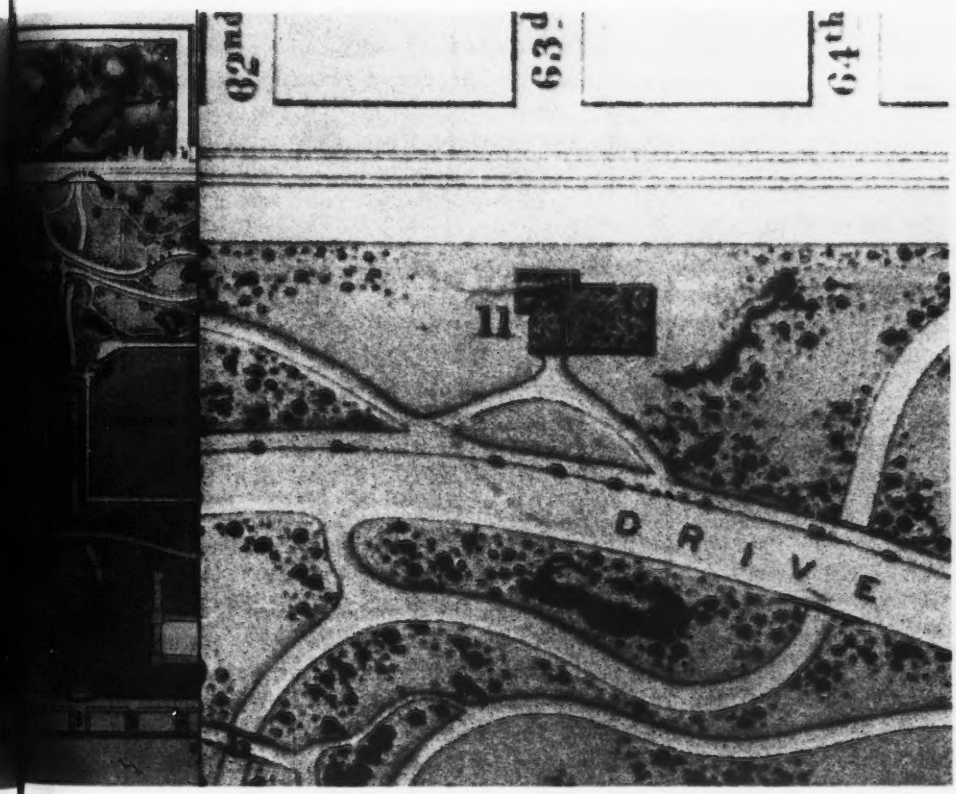


In the meantime plans were being pushed for the accommodation of this great parade of past life in Central Park. It was decided that these models would not be out in the open air, as were the restorations at Sydenham; rather they were to be housed in a large museum building located in Central Park, a concession on the part of the Park Commission to "the variable climate, and the duration of the winter in New York" (1868, p. 131). It was to be known as the Paleozoic Museum.[3]

A map of Central Park, included in the Twelfth Annual Report of the Board of Commissioners published in 1868, shows the location of the

[3] Hawkins and the Park Commission introduced a source of confusion in terminology by this choice of a name. Evidently they were using the term "paleozoic" in a general, literary sense to encompass ancient life of all ages, but the term had already been established in geologic usage to designate a definite, limited era of time.

Fig. 4



Paleozoic Museum as being within the park, fronting Eighth Avenue (now Central Park West) and directly opposite Sixty-third Street. If the building was plotted to scale on the map, it evidently was intended to be a sizable structure. This is further indicated by some of the figures of costs given in the report of the enlarged Department of Parks (published in 1871), in which some discussion is devoted to the "building in which should be exhibited specimens of animals alleged to be of the pre-Adamite period." According to this report, a sort of post-mortem on the Paleozoic Museum, an excavation for the foundation was made, and the foundation was built at a cost of thirty thousand dollars. Estimates had been procured for the erection of the museum building on this foundation, and each of the several estimates came to approximately three hundred thousand dollars–a considerable sum of money in 1868 or 1870.

Unfortunately no drawings of what the building was to look like on the outside have come to light, but a lithograph published in the Thirteenth Annual Report of the Board of Commissioners (Fig. 5) gives us an idea of what the architects and Mr. Hawkins in concert were perpetrating. It is evident that the influence of the two Crystal Palaces dominated the thinking of those who were planning the Paleozoic Museum. The Palaces had demonstrated the practicality of cast-iron and glass construction, and it appears that the Paleozoic Museum building was to be erected in accordance with this new technique. It was to be a building of decorated cast-iron arches, with a great arched roof. As can be seen in the figure, there were to be walks on two levels along each side of the structure. In the middle of the building, on a sort of rocky island, were to be the various reptilian and mammalian quadrupeds of the past, as interpreted by Waterhouse Hawkins.

In this connection it may be informative to quote the explanatory text that appears in the Report, opposite the lithograph:

> The great group of ancient animals formerly living during the secondary geological epoch on the continent of America, now being modeled and restored to the natural size and appearance of the animal as in life, by Mr. Hawkins, for the Central Park, consists of the gigantic *Hadrosaurus* of the exact dimensions (one twenty-six feet, the other thirty-nine feet, long), as proved by the fossils described by Dr. Joseph Leidy in the "Smithsonian Contributions to Knowledge, No. 192"; also models of "Laelap's Aquilunguis" fossils, described by Cope, together with the aquatic "*Elasmosaurus* and *Mosasaurus*" (1869, p. 28).

In Figure 5 the largest upright animal on the left is the larger of the two individuals of *Hadrosaurus*, the smaller one being the animal resting serenely in the foreground, its tail neatly curled forward past the right hind foot. "*Laelaps*," more properly designated *Dryptosaurus*, is represented by the two dragon-like creatures contending over the body of an unfortunate victim presumably slain by one or both of them. The snake-necked reptile with flippers, beneath the writhing tail of the "*Laelaps*," is

Fig. 5. A picture from an annual report of the Board of Commissioners of the Central Park, showing what the Paleozoic Museum was to look like inside. We see here, from left to right, a group of Hadrosaurus, *two carnivorous dinosaurs, presumably* Dryptosaurus, *a long-necked plesiosaur, beneath the tail of one* Dryptosaurus, *two glyptodonts in the foreground, two giant ground sloths among the trees in the background, a mastodont with upraised trunk, below it a carnivorous mammal of some sort, and finally at the far right possibly a mammoth, with only the head showing. All these extinct beasts, from various geologic ages, occupy an island beneath a characteristic Victorian arched arbor of foliage.*

without doubt *Elasmosaurus*. But what the smaller upright reptile on the left of the group, the one with the long snout, is intended to be, is a puzzle.

In this regard it is interesting to compare the Hawkins interpretation of *Hadrosaurus* and "*Laelaps*" with modern restorations based on materials and knowledge of a far more detailed nature than were available to the early students of paleontology. The case of *Hadrosaurus* is especially instructive, as it shows an early restoration based on incomplete evidence and certain erroneous concepts, contrasted with a modern restoration based not only on complete skeletons but also on excellent fossilized mummies, in which the texture of the skin is preserved in detail (Fig. 7).

Let us continue with the excerpt from the report:

The second division of the group will illustrate the post-tertiary period, and represents the Mastodon, the Mammoth, Megatherium, Megalonyx, Glyptodon.

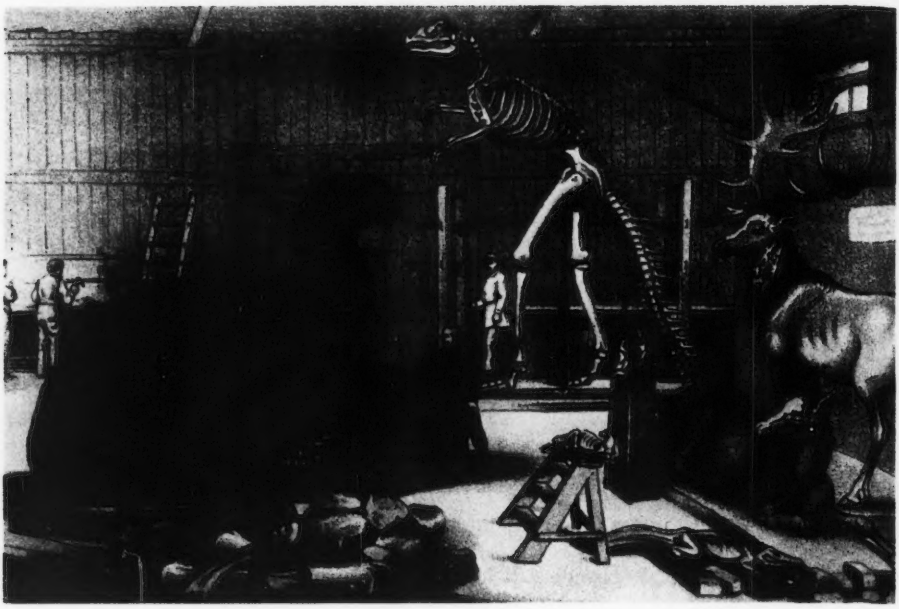


Fig. 6. The interior of Waterhouse Hawkins' studio, as depicted in an annual report of the Board of Commissioners of the Central Park. The large animal on the left is Hawkins' interpretation of Hadrosaurus, *the first dinosaur known from North America as a reasonably complete skeleton. On the right are two Irish elk, copies of the models at Sydenham, and in the background is the Hawkins reconstruction of the skeleton of* Hadrosaurus. *It may be assumed that the figure seated on the base of the* Hadrosaurus *model is Hawkins.*

etc., etc., thus uniting the early periods of animal life with the earliest evidence of man's existence, and so constituting a complete *visual history of the American* continent from the dawn of creation to the present time (1869, pp. 28–29).

In Figure 5 the mastodon is undoubtedly the elephant-like animal with the uplifted trunk. Perhaps the mammoth is the elephant whose head appears peeping over the terrain in front of the mastodon. The large mammals attacking the tree in the background are probably intended to be *Megatherium,* or perhaps one of them is *Megalonyx,* both of these being closely related genera of giant ground sloths. The animals with domed shells represent a pair of glyptodonts, which are extinct, giant relatives of the modern armadillo. The crouching animal in the lower right-hand corner of the figure comes under the category of "etc., etc.," and is probably one of the Pleistocene or Ice Age carnivores.

Perhaps the Paleozoic Museum was to have contained more than is shown in the figure. But there is reason to suspect otherwise, and, if such

be the case, then the Park Department description of the group as exhibiting a "complete visual history of the American continent from the dawn of creation to the present time" is something short of absolute accuracy. Even in those days such a statement presumed more than was warranted, and today, in the light of modern knowledge, the Paleozoic Museum group represents a very limited segment of past life as known from the North American fossil record.

Indeed, the concept of the Paleozoic Museum was just a bit premature, because it was being planned during an epoch of scientific endeavor that immediately preceded the beginning of intensive fossil collecting and paleontological research in North America. Only in the last three decades of the nineteenth century did the great wealth of fossil remains from western America begin to come to light, and the work of disinterring and interpreting these fossils has continued up to the present day. In short, the intentions of the Park Commission and of Waterhouse Hawkins were highly commendable, and their vision was truly large, but within ten years their Paleozoic Museum, had it been completed, would have been outdated and very incomplete.

So much for the group that was being planned for the Paleozoic Museum. Evidently this project took a more concrete form than mere plans, for in the 1869 Report the Commissioners state that "The excavations for the structure for this department of the Museum are now going on at a point near the Eighth Avenue, about one-half way between the Merchants' gate and Transverse road No. 1" (1869, p. 29). (The Merchants' Gate was the original designation of the Columbus Circle entrance to the Park; Transverse Road No. 1 is the road that enters opposite Sixty-sixth Street.)

While the excavations for the foundation were under way, Mr. Hawkins was busy with his reconstructions. Evidently a large shed or studio had been constructed for him (presumably near the site of the museum), and with the aid of some assistants he began modeling the animals for the display in the new building. In the Twelfth Annual Report of the Board of Commissioners is a lithograph showing the interior of his studio (Fig. 6).

In Figure 6 we see in the left foreground the recumbent model of *Hadrosaurus* being examined by a gentleman who very likely is Mr. Hawkins. In the background is the Hawkins restoration in plaster of the skeleton of *Hadrosaurus,* one copy of which was until recent years on display in the Academy of Natural Sciences of Philadelphia. On the right-hand side of the figure are models of a large stag and a hind which can hardly be anything else than the great Irish elk, as restored by Hawkins at Sydenham. How these animals get into the American scene is a mystery that is not explained in the report. Also we can see in the foreground what

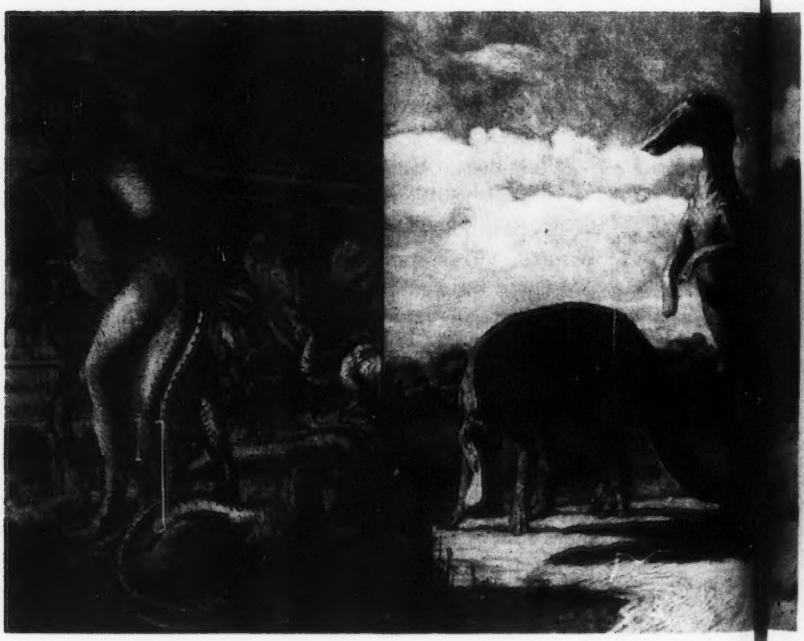
appears to be some sort of small crocodile.

Everything went well during 1868 and the following year. Hawkins labored over his models, and the Park Commission pushed the preliminary work on the museum building. Then in the spring of 1870 the hopeful plans and the hard work of Hawkins and of other people concerned with Central Park suffered a disastrous setback through the machinations of politics. This was the heyday of the notorious "Boss" Tweed and the infamous Tweed Ring, a fine collection of scoundrels who worked their way into many aspects of city affairs.

On April 20, in accordance with "an Act to reorganize the Local Government of the City of New York," the Board of Commissioners of the Central Park was abolished, and in its place a new Board of Commissioners of the Department of Public Parks was created. At first sight it would seem to have been a logical move to place all the parks in the city under a single

Fig. 7. A comparison of Hawkins' interpretation of Hadrosaurus *(the same as shown in Fig. 5) and a restoration done by Charles R. Knight under the direction of Henry Fairfield Osborn and based on complete skeletal materials.*

Fig. 7



board, thereby integrating the entire park program. But there were two flies in the ointment, a Mr. Peter B. Sweeny and a Mr. Henry Hilton, obviously henchmen of Tweed, who were appointed, respectively, President and Vice-President and Treasurer of the newly created Department of Parks. Andrew H. Green, the former Comptroller of the Park who had been so instrumental in establishing the Paleozoic Museum and in making arrangements for Hawkins to embark on his part of the project, was too big a man for even the Tweed gang to dismiss out of hand, so he was kept on as one member of the Park Board.

Shortly after he was made top man of the Park Department, Mr. Sweeny descended upon the Paleozoic Museum with vengeance in his soul, and that was the end of the museum. The project was abandoned, and the foundation was buried, as were all of Hawkins' molds and models. It was an ignominious finish for a venture that had been conceived with such bold imagination and commenced with such vigor.

Within the next year or so things changed for the better, because, as stated in a subsequent Annual Report of the Park Department, "a public excitement in regard to the financial condition and prospects of the city began to prevail, the results of which, as it continued and swelled, caused constantly increased embarrassment to the officers of the Department. In November [1871] the President of the Department, Mr. Peter B. Sweeny, and the Treasurer, Mr. Henry Hilton, resigned those offices and also their positions as Commissioners of the Department" (1871, pp. 1–2). But the damage that had been done in such haste could not be easily undone. Hawkins' work was irrevocably destroyed, and the impetus for the Paleozoic Museum had vanished. It was a thing of the past, never to be revived.

Waterhouse Hawkins was justifiably angry about the whole affair. In 1874 he presented a report at the Academy of Natural Sciences of Philadelphia, during the course of which he alluded in unkind terms to the "iconoclastic Central Park commission." One of the early staff members of The American Museum of Natural History, Charles F. Holder, met Hawkins at about this time, "and the subject uppermost in his [Hawkins'] mind was the destruction of Sweeny and Tweed for their desecration of his models."

There is little more to be said about the Paleozoic Museum. Waterhouse Hawkins left New York with bitter thoughts and very raw feelings about Central Park, about the Park Commission, and about city politicians in general. There is presumably a foundation still under the ground of the park, near Eighth Avenue and opposite Sixty-third Street. Somewhere nearby, for the bewilderment of future archeologists, are buried molds and casts of gigantic animals like nothing ever seen by man.

Perhaps a few final speculations may be considered, even though such speculations are idle exercises at this late date. What if the Paleozoic

Museum had been completed as planned? Would its presence in Central Park have affected the growth of The American Museum of Natural History? It is worthy of note that in the report of 1869 on page 82 a letter (dated December 30, 1868) was published from "a number of gentlemen" to the Commissioners of the Central Park, in which a proposal was made that a museum of natural history be established in the park. This was the initial step towards the establishment of The American Museum of Natural History. Would the movement that led to the successful development of our present museum have been hampered if, during the 1870's, the Paleozoic Museum had grown into a large and impressive institution?

Even if there had been no particular competition between the two museums along general lines, might not the Paleozoic Museum have stifled the development of the subject of paleontology at The American Museum? In this respect there is a significant statement in the Report of 1868:

> It may be observed that the moulds of the entire skeleton of this gigantic creature [*Hadrosaurus*], now the property of the Commissioners of the Park, are valuable as a medium of exchange with other institutes for fossils which may form the nucleus of a Geological Museum, that may arise in connexion with the restorations now being made for the Central Park (1868, p. 131).

It seems within the realm of possibility that, if a geological museum had grown out of the Paleozoic Museum, it might very well have acted as a deterrent to the development of geology, paleontology, and mineralogy at The American Museum, for one can hardly visualize the city as being enthusiastic about two programs in the earth sciences at quasi-municipal museums only a few blocks apart. One can imagine, then, that The American Museum of Natural History might have grown up as a biological-anthropological institution, while all the things of the earth, such as dinosaurs and other spectacular fossils and minerals and rocks, would now be a bit farther downtown.

It is probably fortunate that events did not take this turn. Resources and efforts would have been divided between two museums, and a geological museum, if such had come into being, would have been saddled with a large series of expensive, inaccurate models. Nevertheless, one can wistfully wish that the Waterhouse Hawkins restorations were still to be seen somewhere. They would be important records in the development of paleontological thought and practice, and above all, superb monuments to the exuberant vitality of Victorian man.

Some Ideas on Exhibition Installation

JAMES JOHNSON SWEENEY, DIRECTOR
THE SOLOMON R. GUGGENHEIM MUSEUM

With the naïf painter, the folk artist, and the primitive, size is commonly equated with importance—even with quality when that is understood as virtue. Not so long ago the dreadnought and the battle cruiser were scale symbols of international power. Today the atom is enough.

In our period in the museum and exhibition world, we see what may be the culmination of a century's striving for the grandiose: larger museums, more comprehensive collections, more exhaustive—and exhausting—exhibitions. Yet how often we recall our enjoyment of the Prado and agree with our friends in their enthusiasm for the pleasure it gave them as a picture gallery. It has often struck me that one approaches art as one approaches food, or at least fine cuisine. In the case of cuisine, the restaurants, in Paris, for example, in which one is likely to find the choicest food are small restaurants of ten or fifteen tables. When the service expands beyond this number, the quality almost inevitably declines. To serve up art appetizingly and satisfactorily is equally as difficult as to serve good food.

For this reason, in my opinion, the future of the art museum lies perhaps in the area of the *bistro* which serves a connoisseur's choice, rather than in that of the more democratic approach which attempts to give the greatest relative satisfaction to the greatest number.

How else can we hope to raise the public taste, which is our primary duty as museum directors and educators?

Yet I realize that today such an outlook is still heretical, or, from another point of view, may be looked on simply as reactionary. I am afraid my own trustees would not consciously and avowedly subscribe to such a view at any rate expressed in just those words.

(Editor's Note: The present article was delivered as an address to the Northeastern Museums Conference at the Delaware Art Center on November 7, 1958.)

Still, when I was originally asked by the Trustees of the Guggenheim Foundation how I envisaged the role which the museum plays and not tread the same ground as certain of its neighbor institutions in New York, I gave a reply which I feel expressed this outlook merely in different words. And the trustees accepted it. I pointed out that this was the trend which museums had commonly followed in the past century and that today the historical museum and the comprehensive exhibition were no longer what was most needed. Virtually every art museum in the country was at present seeking to compass each of these ends. Collecting on a grandiose scale had grown from a disease inherent in our society to a menace. A seemingly unlimited power to purchase the world's art had dwarfed the interest in discrimination. What was needed now was a turn from *collecting* to *selecting*. The quality of a work of art should be reëmphasized. The education of the public taste in art should be undertaken through the stimulation of interest by the quality of a work of art, rather than by information about a work of art. To do this, concentration was necessary. One fine painting thoroughly appreciated, like one great book well read, would have more cultural effect than a world of digests or surveys. To focus the observer's attention on quality, a small museum, or an exhibition of limited scale, was most effective. The menu should be choice and selective—a few excellent *plats du jour* to school the taste, without the distractions of a wide choice which could never be assimilated in a single visit. And we find ourselves back in the *bistro* with ten or fifteen tables—back in the Prado in comparison with the Paris Louvre or New York's Metropolitan Museum.

And what holds for a museum holds for an exhibition. The reputation of many a leading contemporary artist has been damaged by an overgenerous comprehensive exhibition. A desire for a breadth of representation, an historical coverage of all phases of his work, too frequently inundates selection. How much better for the reputation of a great contemporary if an exhibition were focused on a selection of his finest work made by critics of taste familiar with that artist's work and sympathetic to it, rather than a gathering together of examples from every period of that artist's researches. Again, how much less confusing to the public which visits an exhibition in hope of guidance, or at any rate in the hope of training its taste for the best.

I have often thought that the problems of museum presentation and exhibition installation are very closely related to those of designing a book. In a sense, the only major difference is that the visitor actually moves through the exhibition and becomes part of the installation, while the book always remains an object apart. But each speaks primarily to the senses of the observer, and each in the end, to have its effect, must be assimilated or digested intellectually.

Perhaps the most valuable experience or lesson in museum installation

I ever had came through the necessity of having to arrange an exhibition in a gallery that had only one solid, opaque wall: the other three were of glass. This was the Art Gallery of the Massachusetts Institute of Technology. Alexander Calder had invited me to Cambridge to help him to install an exhibition of his mobiles and stabiles. I was to meet him at the gallery on a Saturday morning and to work with him through the weekend so that the show might be opened on the following Monday afternoon.

On Saturday morning I arrived, but no Calder. Normally he is an extremely early riser. I could not understand. But a few minutes later I was given the explanation: Calder had been in a motor accident and would be confined to the hospital for at least a week.

I looked around. His sculpture had been unpacked. It lay, every item dismantled, in tidy piles on the gallery floor. I was never mechanically inclined. But this vast dismemberment was not what gave me pause. I realized at the same moment I was in a gallery that resembled to me in my distress more than anything else an oversized fish tank: no walls against which to place objects, just light and more light.

Previously, I had always approached the arrangement of an exhibition as the composition of pictures or objects on walls or against walls. Here there were no lateral backgrounds! Fortunately my material was objects that could benefit by three-dimensional presentation. My solution came by my treating the gallery as an "aquarium" and composing the cubic interior by relating the mobiles to the stabiles on different levels throughout, as if they were fish swimming through the gallery space, rather than objects shown against two-dimensional backdrops.

The arrangement worked with a gay effect, but this was not its most important result for me. From this need to compose the interior space of a gallery without the aid of background walls, I came to realize that a gallery should never be composed merely as individual walls, but that even paintings should make their aesthetic and critical communications across, up and down, and through the total gallery space. As one walks into a gallery, one's eye should be caught from the most evident wall point by a painting or sculpture which should at once set the tone of the show and invite the visitor in. Once this painting establishes its grip and tempts the visitor towards it, another, offering a critical comment or decorative association by its similarity or contrast, should be placed in such a way as to lead the visitor farther along. Each key point should be covered in such a way as to link it with another key point, so as to lead the visitor through the exhibition along the critical pattern which underlies the installation in such a way that the visitor is unaware he is being led or following a pattern of viewing other than his own.

Previous to the Calder episode, I had always more or less depended on the chronological ordering of an exhibition for my unity of presentation.

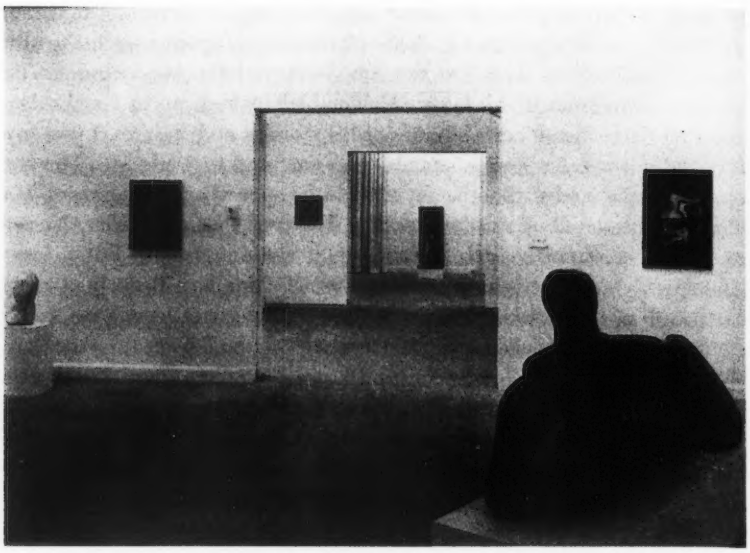


Fig. 1. ". . . even paintings should make their aesthetic and critical communications across, up and down, and through the total gallery space."

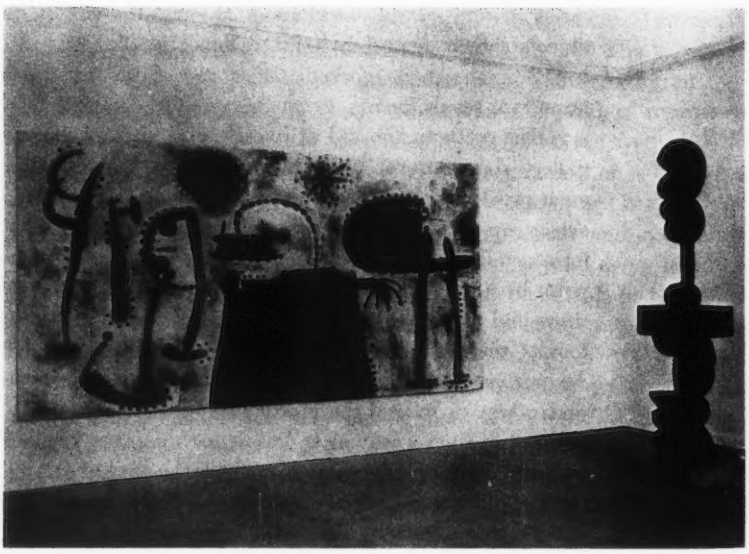


Fig. 2. ". . . the desideratum was a picture that seemed to make part of the wall."

After working with the Calder material at the Massachusetts Institute, I realized how a critical or didactic use could be made of installation, or of presentation, and in such a way that, through the emphases of installation placement, a subtle commentary could be made on the paintings or sculptures that were included.

The exhibition director in this approach employs his devices of presentation and his paintings and sculptures much as an orchestra conductor marries the instrumentalists to the composer's score. But they must be married; they must actually give the impression of having been fused, the works of art dictating the devices of presentation most appropriate to them, and the museum director recognizing these and respecting them.

Another lesson in presentation came to me, similarly by chance, but this time as an outgrowth of economy; though I am sure the consequences have by few persons been attributed to such an origin.

When I first joined the Guggenheim Museum about six years ago, I found that the greater part of the pictures in the collection were framed in heavy wood frames, crudely made, all heavily gilded or silvered. Some of these monsters were eighteen inches wide and proportionately heavy. Mr. Frank Lloyd Wright characteristically described them as "stud-horse" frames. When it came to planning the first exhibition of pictures from the collection, I was faced by the problem of what to do about them.

I realized that if I reframed 100 paintings at the most modest figure, the cost would unquestionably be somewhere in the region of five thousand dollars. For all the paintings in the collection which would eventually require reframing, the total would range between fifteen thousand and twenty thousand dollars. Why spend such an amount on the furniture of paintings? Why not find another means of presenting them?

We experimented for three months with metal-stripping and wood-stripping; but we finally decided that these were only other frames of a reduced size. Then the solution came, not through experiments with framing, but through experiments in hanging.

What we realized as the desideratum was a picture that seemed to make part of the wall. The way to this was by our dispensing with any visible means of support.—I was told by one who ought to know, my wife, that this solution must have come very natural to me.—With the hanging wires gone, the frame gone, the picture fixed flat against the wall, the wall of a solid color became a unifying frame for the whole exhibition. Economy led to simplicity of presentation; simplicity, to a more thoroughgoing unity. Instead of a compartmental display, the distraction of barrier frames between the elements, the exhibition became a single unified presentation.

In both cases these lessons in presentation grew out of limitations;

Fig. 3. "Economy led to simplicity of presentation; simplicity, to a more thoroughgoing unity."

both led to a concentration and a unification of expression. In doing so, they led to an intensification and clarification of both the artist's work and the viewer's response.

Such should be the exhibition director's final aim, and it is never most effectively compassed by a strictly historical or solely documentary approach. The exhibition director should attempt above all to display works of art as works of art, not as fragments from case histories. The exhibition director in addressing his public should take a leaf from the poet. "The poet's language," Shelley wrote in *A Defense of Poetry*, "is vitally metaphorical; that is, it marks the before unapprehended relations of things and perpetuates their apprehension; . . ."

When an exhibition director achieves this, this is creative installation.

II/2 1959

Current Trends in Professional Standards for Museums

JEROME ALLAN DONSON, DIRECTOR
LONG BEACH MUSEUM OF ART

Despite a predictable lag, owing to the basic individualism inherent in the museum profession, the inexorable trend is to the codification and establishment of standards for museums and their personnel. Even the most reluctant realize that the gains in organization must eventually outweigh the disadvantages implicit in conformity. Because the various institutions and their areas will inevitably differ in some respects, the dangers of standardization can be minimized.

If we improve our services and our institutions, we will, as a matter of course, realize rewards adequate to our profession.

There is much being done to establish museum standards, particularly in the eastern United States. The western museums, currently engaged in meeting the challenge of their rapidly growing populations, have not given the problem quite so much attention. Hildegard Howard, Chairman of the Committee to Survey Standards for Curatorial Positions, reported to the Western Museums Conference in October, 1956, in San Francisco on this one aspect of the standards situation. A questionnaire circulated by her committee sought to establish the duties of the curator, qualifications for the position, and the salary. In the conclusions of the Committee's findings, emphasis was placed on the "need for developing a commonly accepted body of useful professional knowledge, abilities and skills in the field of museology in which students can be trained, either through apprenticeships or in conjunction with universities."

The movement for establishing an over-all pattern of standards for institutions in the American Association of Museums similar to standards

(EDITOR'S NOTE: The present report was delivered on October 2, 1958, to the Western Association of Art Museums in Los Angeles.)

established by the American Library Association or the American Association of University Professors has been growing, and numerous contributions in this direction have already been made. The following summary is presented to tell what has been done and what is being done to establish standards for museums.

The Southeastern Museums Conference of the American Association of Museums has been actively concerned with the problem of museum standards for many years. In 1956 a summary of reports was made by regional committees on the problems and prospects of small southeastern museums; workshops were held at the annual meetings, subsequently, in which a very substantial proportion of the membership of the Conference participated. At the last meeting of the Conference, the membership unanimously favored some kind of accrediting program for museums, and a continuing Committee on Standards, under the chairmanship of Arnold B. Grobman, has been working towards this end.

The Committee devised two plans for the accrediting of museums.

The first, and least favored, calls for the designation by the Conference of a model state law for adoption by several states. Essentially the bill would provide for the issuance of a state charter (and thus give tax-exempt status), provided the individual museum is operating above certain minimum standards. New York already has such a state law in force.

The other plan would be for the conference to serve museums in its area as an accrediting agency.

Evaluations would be by a visiting team upon invitation of the individual museum. There is considerable precedence for this in other fields and the Committee studied the programs of the National Commission for Accrediting, the Southern Association of Colleges and Secondary Schools, the Association of American Medical Colleges and the American Camping Association.

To serve as a basic guide for either agency-accrediting or state-chartering, the Committee drafted a general statement of principles regarding good museum operation.

In order to obtain detailed information regarding the status of museums in that area, the Committee then drafted a report-questionnaire; it was for the purpose not of accrediting, but as the basis for comparative and other studies. A review of the information compiled was scheduled for presentation at the Southeastern Museums Conference in Winston-Salem in October. In addition, the Committee drafted a general statement of principles regarding good museum operation.

The last two meetings of the American Association of Museums have been devoted to the subject of standards, and a number of important reports resulted.

Leonard Carmichael, Secretary of the Smithsonian Institution, presented a statement for the Committee on Standards at the Fifty-second

Annual Meeting in Nebraska, in which he summarized six broad functional rather than subject-matter areas:

1. Ethics: The Association already has a code of ethics.
2. Organization: When the problems are solved on individual levels, some generalities can be made.
3. Employment: The subject of numerous studies.
4. Finances: Studies were recommended similar to those that have been made of the finances of universities and libraries.
5. Exhibitions: It was felt that new techniques were of interest to all. The importance in relation to the field of human engineering and the studies of Edward Stevens Robinson on the psychology or sociology of the museum visitor was noted.
6. Education: Many persons think that the central part of education in museum work could be more clearly recognized.

Among the more specific points considered for the definition of museum standards are: the definition and statement of objectives; relationships with boards and trustees; personnel and building facilities; collection evaluation; recording methods; exhibit techniques; and membership services.

Carl E. Guthe made the following statement of definition for the Education Section of the meeting in Nebraska in 1957:

> . . . "Standard" . . . is a shorthand expression for a group of graded criteria which constitutes a more or less ideal measure, or yardstick, by means of which an object, an achievement, an activity or an individual may be evaluated. Actually, standards in museum work already exist, for each museum worker uses standards of his own creation to evaluate the success with which he has performed his several tasks . . . When we speak generically of museum standards, we envision a number of codified criteria for evaluating various phases of museum work which have been so carefully formulated that they will be accepted and followed by the majority of museum workers.
>
> [But] . . . generally accepted museum standards will influence the growth of the museum movement only in so far as individual staff members are capable of appreciating their significance and of applying them to the work in their own museums . . . it is vitally necessary to formulate a group of criteria by which the usefulness of individual staff members may be evaluated.[1]

Dr. Guthe also pointed out that the museum movement has so far failed to codify and distribute acceptable standards for professional competence in museum work. He further stated that (1) various museum positions must be codified into major and minor categories in terms of the nature and complexity of their duties and responsibilities; (2) qualifications in the training, experience, and ability required of candidates for these positions should be worked out, because the duties and responsibilities

[1] Guthe, Carl E., "Correlation of Museum Positions and Standards," CURATOR, vol. 1, no. 2, Spring, 1958, pp. 5–6.

of various museum positions differ; and (3) the duties of specific positions differ in small and large museums. He therefore recommended that a clear definition be made between administrative, curatorial, technical, and educational positions so that the duties, responsibilities, and minimum qualifications of each can be established.

Another aspect of the need for correlation in the area of staff and personnel has been stated by Stephan F. de Borhegyi:

> Numerous articles appearing in the last few years have called attention to the fact that the output of trained museum personnel has lagged far behind the actual job opportunities . . . At the moment there are many more positions open in museums than there are trained persons available to fill them . . .
>
> This lack of properly trained museum recruits was given special attention in the issue of the *Midwest Museums Quarterly* for July 1956. Twelve museum specialists from the United States and Canada voiced their concern about the general inadequacy of museum training programmes in the U.S.A. and their total lack of co-ordination.[2]

Dr. de Borhegyi further pointed out that ". . . if special recognition of museum skills and achievements is to be made, it should be standardized on a nation-wide basis and should come from the national organization, that is, the American Association of Museums. At the moment there is a potpourri of non-standard, unco-ordinated, almost haphazard museum training courses given by universities or museums."[3]

He made a number of suggestions and proposals for study by the national committee, among them (1) that a standing committee on American museum training should be established; (2) that a course synopsis be submitted to this committee for accreditation; (3) that the course should include museum science; (4) that museum apprenticeship should be provided in the training; and (5) that an examination by the American Association of Museums committee be given for a diploma. He also referred to the small regional museums, limited in staff, which have employees without specific museum training and proposed that a program to increase the skills and knowledge of such personnel be provided.

The function of the museum, according to the size of its collection and the type of collection in relation to the size of the community, is presented by Creighton Gilbert in his recent article, "A Rating for U.S. Museums," published in the *College Art Journal* (vol. 17, Summer, 1958, pp. 392–403). Some interesting aspects of this problem, which is essential for the study of standards, were discussed. The stimulus for the observations came to Mr. Gilbert from the book "Old Masters in America" by John Morse,

[2] de Borhegyi, Stephan F., "A Museum Training Programme," *The Museums Journal*, vol. 58, no. 4, July, 1958, p. 78.
[3] de Borhegyi, Stephan F., *loc. cit.*

published in 1955, in which an analysis of the number of paintings by old masters from Giotto to Courbet that are in art galleries in this country was used as a yardstick.

The conclusions of these reports are that standards of quality, accuracy, and educational value should be established for the particular problems of both large and small museums. Operational and functional standards for personnel whose duties are defined and salaries commensurate with those that are paid to university teachers and professionals doing comparable jobs in the community should be determined.

The studies thus far completed indicate that the ultimate drift is to the accreditation of institutions and personnel, with adequate provisions for individual problems. A program that will assure museums a pool of trained personnel must eventually result in finer institutions, better public acceptance, and greater rewards for all.

A Free-standing Mount of *Gorgosaurus*

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CHICAGO NATURAL HISTORY MUSEUM

Seldom are two fossils preserved in exactly the same way. There are thus no hard and fast rules for treating them. Basically, the principles of fossil preparation differ but little, yet the method of preparation must be changed to conform to the type of preservation.

Ordinarily, when a fossil skeleton is exhibited as a free mount, two posts are used for supports. If the iron is fitted to the outside of the bones and external props are used, very little damage is done to the specimen. Where internal supports are used, the bone must be drilled, broken, repaired, and restored many times. With each break there is always some loss.

Because the *Gorgosaurus* skeleton was to occupy a very prominent place (Stanley Field Hall) in the Chicago Natural History Museum, the Division of Paleontology was alerted to put in its best efforts, and a great deal of planning was done for this special exhibit.

The posterior part of the pelvis, the rear limbs, and the tail of the skeleton consisted of plaster. For this reason it was decided that a free-mounted, self-supporting dinosaur should be erected. The use of internal support had been thought of many times, but so far we had never had a specimen that presented such a good opportunity for trying it.

The dorsal and cervical vertebrae, the skull, and the jaws were weighed. Equipped with this information we called in a structural steel engineer to help us determine the size of a rod necessary to support these elements in a standing position. To our dismay, we learned that the rod for such a task would have to be at least an inch and a half in diameter. The centra of the anterior dorsals, as well as all the cervical vertebrae, were so laterally constricted at mid-length that the one and one-half inch rod could not be used.

Several other ideas were considered, and we came up with the sugges-

tion that two smaller rods might do the job. The consulting engineer confirmed our idea, and the work of putting together our present *Gorgosaurus* mount got under way.

The model (Fig. 1) shows the general plan of the internal iron work of the *Gorgosaurus* skeleton. The weight is supported by the legs, and the tail is tied to the iron work of the base. Four-inch angle irons were used as the base. Rods one and three-eighths inches in diameter, inside pipe two inches in diameter with quarter-inch side walls, were the leg supports. Two pieces of four-inch angle iron welded together were used for the pelvic base and two one-inch special steel rods (AISI. C 1018 from Joseph T. Ryerson and Son, Inc.) supported the vertebral column and the skull.

We began the mount by preparing the pelvis. The two welded pieces of angle iron were placed on a temporary support which enabled us to change the angle (up or down) of the pelvis (Fig. 2). Such mobility was necessary, as we assembled the vertebrae at a convenient height and later raised them to the correct angle. The centra of the sacrum were trimmed to fit into the V of the angle iron.

The next step was to prepare the dorsal and cervical vertebrae. Steel rods three-quarters of an inch in diameter were used as the temporary supports. Each vertebra was drilled through the centrum and the neural

Fig. 1. Model used in general plan of supporting the Gorgosaurus *skeleton.*

Fig. 2. Pelvis mounted in its V iron and three spacing plates in the tilting temporary base. Notice the turnbuckle joining the vertebral rods.

Fig. 1

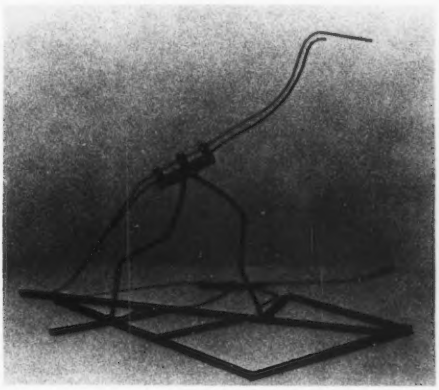
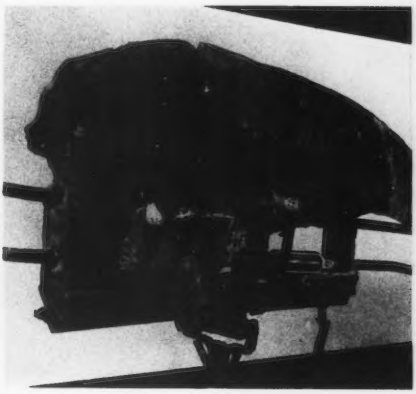


Fig. 2



canal. As we proceeded from the last dorsal to the skull, the space between the centra and the neural canal gradually decreased, and this condition had to be taken into account while we were bending the rods. As each vertebra was placed on the iron work, a metal plate of half-inch steel was placed on the rods. The plate served as a spacer to hold the rods the proper distance apart and was not intended as an invertebral disc. The plates supplied reënforcement as well as a surface to which the rib irons were welded (Fig. 3). These steps were repeated up to the skull.

At this point the skull support presented a problem, but it was solved satisfactorily. The original matrix was left within the skull when it was prepared. A carbide-tipped drill on a long makeshift shank was used to drill a hole through the foramen magnum for almost the entire length of the skull, but not through any bones. Pipe with a one-inch inside diameter was selected, and a plate was welded to it; the plate had a hole to receive the lower of the two vertebral iron rods. The pipe was then placed in the skull and firmly set in plaster (Fig. 4). To the plate at the end of the pipe was welded a strip of iron embedded the full length of the palate. The strip served as a hanger for the lower jaws.

The upper rod of the vertebral column was inserted into the long pipe of the skull. The lower rod nestled into the hole in the plate at the end of this pipe. When the pair of rods of the backbone support were twisted, the skull was brought into a slightly tilted position so as to be looking somewhat downward instead of having a stiff, head-up, eyes-forward, military pose. The temporary vertebral rods were then sent to the Ryerson Steel fabricating department where the special steel rods were bent and threaded to match them.

Fig. 3

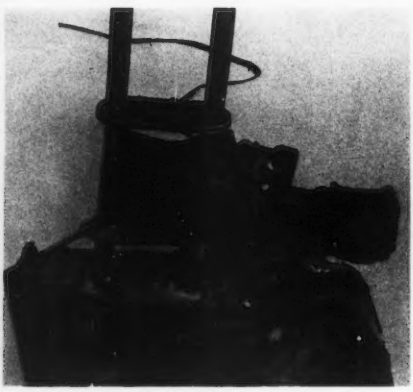
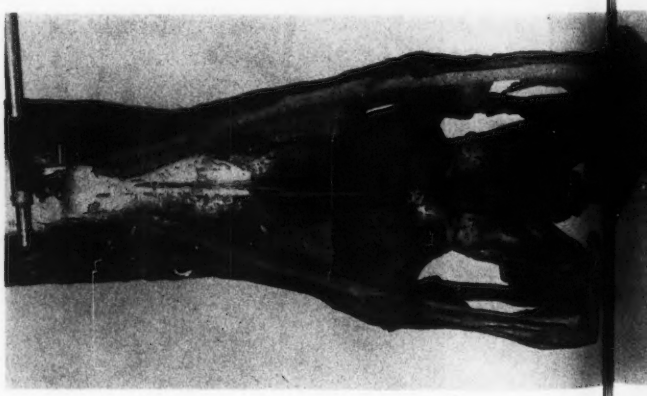


Fig. 4



A preparator in paleontology must constantly use care in handling fossils: "Be careful of this, don't hold it that way," and so on. The childhood urge to break something was completely satisfied when I came to prepare the legs of our skeleton. The right femur was bone. The only way to get a two-inch pipe through it was to break it all to pieces. The internal bone was discarded, and the surface pieces were put back together around the pipe. This procedure may not be proper, but it seemed justified in this case. As the other rear limb bones were plaster, we prepared rubber molds and recast these bones with cardboard mailing tubes two and one-half inches in diameter inserted in the molds.

After each cast was completed, the paper tube was removed, and the two-inch pipes were plastered in place. Proper angulation of the legs was provided by our bending the one and three-eighths inch rods, which were then inserted into the pipe and welded in place, thus giving a continuous steel support from the base to the pelvis (Fig. 5). The upper end of each leg iron was welded to a plate, which was attached with bolts to the angle iron of the pelvis (Fig. 5). If there were any weak points in our mount, this joining, in my opinion, was one, but with a good weld from

Fig. 3. The last dorsal vertebra mounted on its supporting rods. In front of it is the spacing plate with attached rib irons.

Fig. 4. Palatal view of skull showing double inserts and strip in palate for jaw hangers. Temporary support at left is turned 90 degrees from a vertical position.

Fig. 5. Front and rear limbs with supports in place.

Fig. 5

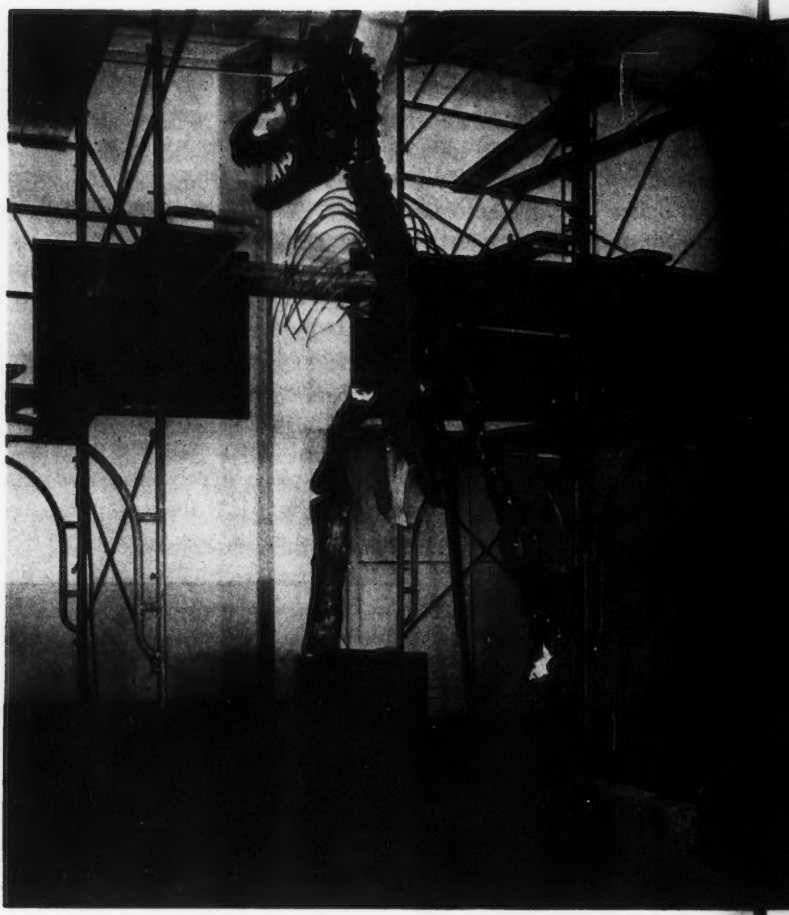


Fig. 6

leg iron to plate, there should be no cause for concern.

At this point we were prepared to make a trial run. As yet we had not tried to put the pieces together. Everything worked as planned, and, with the additions of braces on the leg supports at the base, we were pleased with the appearance and firmness of the skeleton (Fig. 6).

After the trial setup, the permanent mount was begun. The vertebral column rods could not be extended entirely through the pelvis as single pieces. Turnbuckles were used to unite the tail rods to the front rods (Fig. 2). The turnbuckle also permitted the fine adjustment needed in getting the proper length for each rod. It was difficult to hold each bone

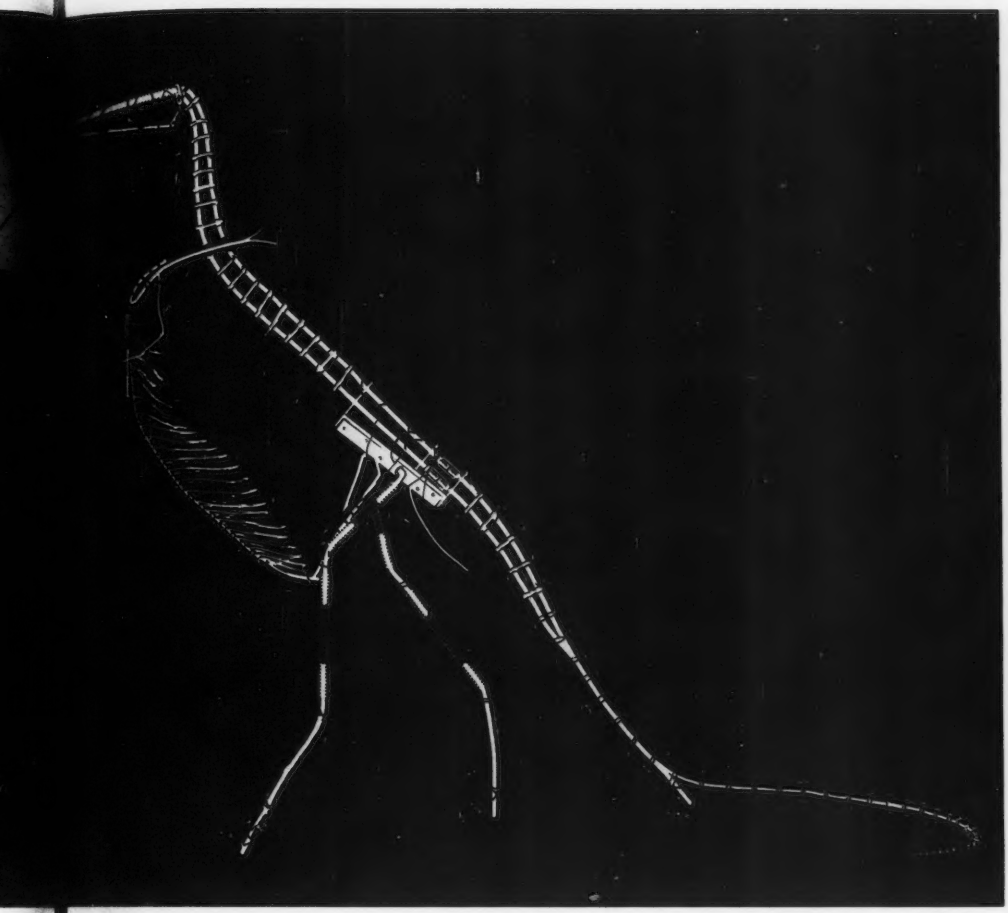


Fig. 7

in exactly the same spot each time a fit was made. Thus, the turnbuckle enabled us to lengthen or shorten the vertebral rods by several inches. The column supports, when adjusted to length and properly oriented, were welded to the plates of the pelvis. The dorsal and cervical vertebrae were installed, the vertebrae were plastered in place, and between the vertebrae the spacing plates were welded to both rods.

Fig. 6. Trial setup. Notice bracing on lower leg irons and tail rod welded to plate, which in turn is bolted to base. *Fig. 7. Details of iron structure.*

The tail support was welded to the base to prevent *Gorgosaurus* from falling on its face. The plaster caudal vertebrae were notched on the ventral part of the centra so that they could be set onto the tail supports, rather than having to be drilled and strung on. The posterior caudals were mounted on a small rod welded to the main tail support at a point near the contact of the tail rod and the base.

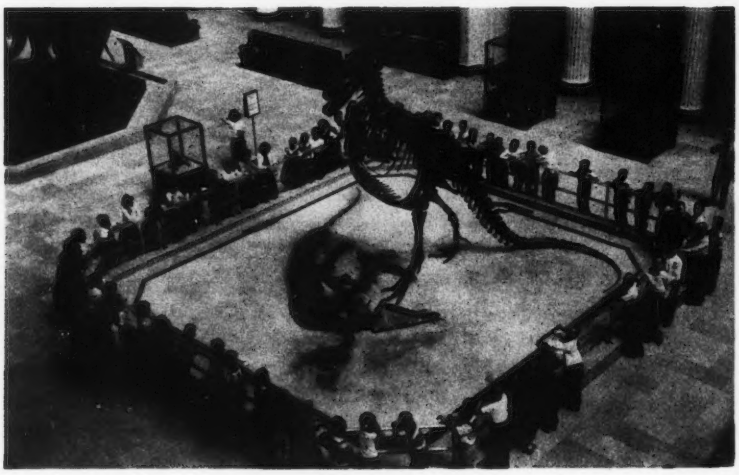
The pectoral girdle was not supported by internal rods. Half oval iron was bent and fabricated to hold these elements. The supports were welded into the appropriate intervertebral spacing plate. Similar half ovals supported each rib. With the addition of the sternal ribs, we had a complete pectoral ring. To this iron ring the front legs were attached.

The belly ribs were plaster reconstruction over an iron framework. They were supported by a strap iron (one-quarter inch by one inch) fastened into the pectoral ring in front and the pubic support behind.

When the foot bones were fitted, the plaster was stained, and a cement groundwork was poured, our self-supporting *Gorgosaurus* (affectionately known as "Gorgeous George") was completed, and at last it was exhibited standing over a recumbent *Lambeosaurus* prepared in its death pose.

The description of the procedures and materials used in our mount is here much simplified. For every bend in the iron, for every hole drilled in the bones, for every fit that was made, many trial and error tests were used.

Days seemed to have been wasted among the scraps of bone, nuts, bolts, rods, pipe, and assorted machinery. But *Gorgosaurus* gradually took form. As it stands completed today, there is little to indicate the months of effort by everyone taking part in its reconstruction.



A Changing Program in Nurse Education as it is Related to the Museum

C. BRUCE HUNTER, SUPERVISOR OF ADULT EDUCATION
DEPARTMENT OF PUBLIC INSTRUCTION
THE AMERICAN MUSEUM OF NATURAL HISTORY

In 1931 William Lord Smith gave the first nurses-in-training program at The American Museum of Natural History as a service to the community. This program was not a venture into a new area of work, but, more correctly, it was an outgrowth of a long and well-defined history of Museum interest and concern in health education. As far back as 1910 there existed a Department of Public Health in the Museum. In the period between 1910 and 1931 the department distributed bacterial cultures to medical institutions and colleges throughout the country. In 1913 alone, 2886 cultures were distributed to 222 such institutions. Health charts on bacteria and insects as carriers were made and distributed as well. Before the First World War, there was great concern about such maladies as typhoid, hookworm, and intestinal disease that were spread by the common privy. The Museum health department showed, by a distribution of photographs, the type of "dry closet" that should be constructed to eliminate flies and other insects that spread these diseases.

From 1931 to 1955, the Department of Public Instruction of The American Museum continued the health program as it concerns nurses in training directly. Lectures were given to visiting nurses in training on such subjects as physiology, anatomy, and animal diseases. Extensive use was made of the old Biology of Man Hall, which is at present being replaced by a new hall.

In 1956–1957 a general survey was made of all the hospitals in the New York area having training schools for nurses. The purpose of this survey was to reëvaluate our own program in the light of new trends in the

nurse-education curriculum. Some institutions are presently offering degree courses for nurses, and their curriculum varies greatly from that of former years. Some institutions have a staff anthropologist, for such organizations as the World Health Organization have pointed out the need for nurses to know more about the customs of various indigenous people throughout the world.

Our survey, in the form of a questionnaire, was sent to the directors of the schools of nursing in Greater New York and adjacent areas in New Jersey. We were in contact with eighty-six hospitals—many of them having no school of nursing. Part of the survey dealt with the nature of the program that we planned to offer, and part was on the mechanics of the program itself. In addition to the questionnaire that we sent through the mail, we also interviewed several of the directors of the schools of nursing in person.

The first significant fact to be noted is that the programs of schools of nursing fall into three groups. The largest group gives a three-year course leading to a certificate. The second trains the practical nurses and nurses' aids. These persons usually have only one year of formal training, or less. The third, which represents the longest training, leads to a B.S. degree in nursing. Such schools as the Bellevue Schools of Nursing and Cornell University School of Nursing have programs in this last category. It may be noted, however, that the majority of students at the Bellevue School of Nursing graduate with only a certificate. In planning a program for nurses, our staff had to be prepared to lecture on any given topic on the program at any of the three levels noted above.

The survey showed that the schools of nursing were interested in four topics of a type that our staff and the Museum were especially qualified to offer. The first of these was on HUMAN BIOLOGY, and the survey revealed a wish that the evolutionary aspects of this topic should be stressed. The second topic of interest was ANIMALS AS TRANSMITTERS OF HUMAN DISEASE. The life histories of such animals as they affect the people of the United States were the chief concern. The third topic was INVERTEBRATES AND THEIR SIGNIFICANCE IN SCIENCE. Invertebrates that are microscopic and parasitic were especially emphasized, as they can be seen in the unusual collection of glass and wax models in the Museum. The fourth topic of significance to the institutions of nursing was on primitive man. Health and disease in primitive societies were particularly emphasized.

With the completion of the survey by the summer of 1957, we presented a new program for nurses in training termed the NURSE EDUCATION PROGRAM. All the above-mentioned topics are offered on this program, and each is tailored to the level of the particular students and the stress on subject matter that the school of nursing desires for each topic. These

programs, which are arranged by appointment, last for two hours. During this time, one of our specially qualified staff members gives an orientation talk and shows a related moving picture or slides, if these happen to be significant for the particular group. The Museum instructor then takes the group into one or two of the exhibition halls that contain the materials on the topic under discussion. A lecture and group discussion then follow for the remainder of the two-hour period. Each Museum instructor interprets the topics differently on his own special subject according to the group needs. Eleven of the eighteen instructors participate in the NURSE EDUCATION PROGRAM in addition to their other teaching programs.

During the first nine months of this new program, twenty-seven classes, from sixteen different schools of nursing, attended the NURSE EDUCATION PROGRAM. The total number of participating nurses in training was eight hundred and twenty-two for the nine-month period. Of the twenty-seven classes, fifteen were given in the field of anthropology and twelve in the field of natural science.

In the hope of improving the NURSE EDUCATION PROGRAM by developing more effective methods of bringing scientific knowledge to the various groups, the staff decided on a "follow-up" questionnaire. This questionnaire was sent to the nurse in charge of each group after the lecture. In this connection we wished to learn the reactions of both the students in the class and the teacher. These were the areas of concern: the method of approach by our instructors; the effectiveness of visual aids; what the nurse in charge expected; and the reaction of the students to the program.

The data from these surveys and questionnaires proved very valuable in our formulating a program that we feel is not only effective for the student nurses but is at the same time a unique service that our Museum can offer to a special group. The American Museum of Natural History is able to serve the community of New York City by a nurse-education program possibly wider in scope than that which most similar institutions can offer in other communities. Nevertheless there is a definite need for smaller museums to present similar programs to nurses in training, who may thereby broaden their perspective of the world in which they live.

The purpose of our NURSE EDUCATION PROGRAM is to give the nurse in training new directions in her thinking about man and the nature of the world as they may affect her own and other people's lives.

Fig. 1

Site Museums and National Parks

RALPH H. LEWIS, CHIEF, BRANCH OF MUSEUMS
DIVISION OF INTERPRETATION, NATIONAL PARK SERVICE

"Site museum" is a new term. At least we do not recall seeing it in the publications of American museums, and a quick survey of indexes failed to reveal it. It is a good term, because its meaning is clear and its implications are sound. A site museum is one that is closely associated with a place having scientific or historical significance. The museum is located at the site. Its scope is the story and meaning of the site. Its exhibits have the sole purpose of interpreting the site to visitors. Its collections preserve the more perishable features of the site. Its activities center on the site. It provides the facilities needed by students at the site, such as study collections, library, and working space. Douglas A. Allan, Director of the Royal Scottish Museum, seems to have brought the term into the vocabulary of English-speaking museum workers. He states its essential character plainly, "In Site Museums, the site is the major element . . ." (*Museum*, vol. 8, no. 2, p. 108, 1955.) Such museums have existed for many years. Only the name is new. The National Park Service has opened eight more of them in 1958 as part of its MISSION 66.

Fig. 3

The term applies most obviously to museums at historic and archeological sites. All the Scottish museums described by Dr. Allan are of this type. A good example in this country is the museum in the new Visitor Center at Fort Frederica National Monument in Georgia. The museum has a view window opening out over the colonial town site and fort. The view is treated as one of the exhibits and occupies its proper place in the sequence. Most of the specimens displayed in the museum are artifacts excavated from the ruins. The exhibits tell the story of Fort Frederica, explain its significance in American history, and attempt no more. The Fort Frederica museum has the advantages characteristic of a site museum—limited and well-defined scope, clear-cut functions, manageable size, and favorable psychological setting.

We all recognize that museums benefit by having stated objectives and well-marked boundaries to their fields of interest. Museums with these know what they are trying to do and avoid spreading their resources and efforts too thinly. For site museums smallness is also a virtue. The museum is intended to help visitors see and understand the site. Its ex-

Fig. 1. Visitor Center, Fort Frederica National Monument. The path from the parking area passes through the building to the historic Broad Street of the town. The museum room overlooks the site.

Fig. 2. Visitor Center, Fort Frederica National Monument. Specimens excavated from the house foundations of Frederica are exhibited in the museum.

Fig. 3. Visitor Center, Fort Frederica National Monument. Museum visitors operate an electric map.

Fig. 4

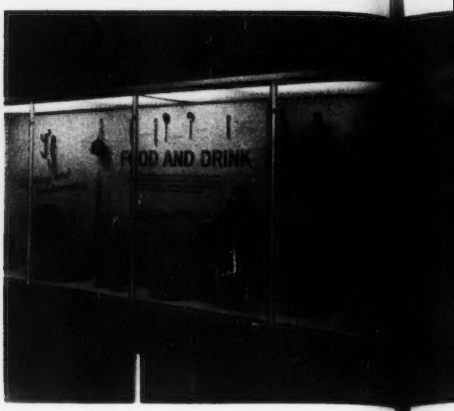


Fig. 5

hibits should require the minimum time necessary to do this, for park visitors, like the rest of us, are usually in a hurry. It is possible in the same compass to offer more for people who want it. Small size gives museums the chance to refine each individual exhibit to the peak of effectiveness, although this is perhaps a dream. We think, too, that people may get more out of exhibits when they see only twenty or thirty at a time rather than trying to see hundreds in one visit.

Recent installations at Jamestown and Yorktown in Colonial National Historical Park, at Andrew Johnson and Pipestone National Monuments, and elsewhere support this new term as appropriate and useful for museums in historical parks. Can it be applied also to museums in scenic parks where natural history is the dominant theme? Are the familiar names of "trailside museum" or "park museum" synonymous with site museum? In some instances the answer is easy. The new museum at Carlsbad Caverns National Park fits the definition readily. Its location, scope, and functions are determined by the cave. The Quarry Museum at Dinosaur National Monument is also clearly a site museum in every respect. For the great scenic parks the situation is more complex. Is the site museum concept useful for them?

One of the most difficult problems in developing a museum for a scenic park is the choice of subject matter. Any of these parks offers almost endless possibilities. How does one select the proper aspects of nature to interpret? The National Park Service has prepared detailed instructions for planning park museums, but none of its manuals gives wholly satisfactory criteria for picking the natural history subjects to be exhibited.

There are several well-worn approaches. One is to present an index or inventory of the principal park features. Such a preview may provide poor

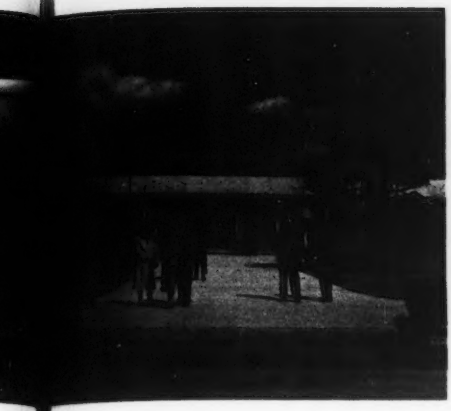


Fig. 7

exhibit material and lead to superficial treatment, with weak continuity. Another way is to use park features in the illustrating and explaining of geological and biological principles. The trouble with such a method is that the examples that add up to a well-ordered demonstration of principles are likely to be commonplace things not particularly characteristic of the park. If the museum chooses to display the features in the park that are unique, rarity rather than importance becomes the measure. The geology, topography, climate, and biology of the park may be packaged in ecological units for exhibition, but the packages tend to be so similar from park to park that individuality is minimized. Park museums can preach conservation, but they do so at the risk of their integrity, for museum exhibits are committed to the impartial presentation of facts and ideas accompanied by the evidence a free mind needs to reach its own conclusions. Exhibits that persuade have their place, but not in a museum. Park Service displays aimed at discouraging litterbugs or cautioning

Fig. 4. Jamestown Visitor Center, Colonial National Historical Park. The museum stands at the edge of the seventeenth-century town site.

Fig. 5. Jamestown Visitor Center, Colonial National Historical Park. Jamestown artifacts illustrate the colonists' daily life.

Fig. 6. Yorktown Visitor Center, Colonial National Historical Park. From the observation platform on the roof, visitors can see the vital interrelationships of the siege lines, the town, and the York River.

Fig. 7. Yorktown Visitor Center, Colonial National Historical Park. Visitors look down from the roof onto cannon in the British lines.

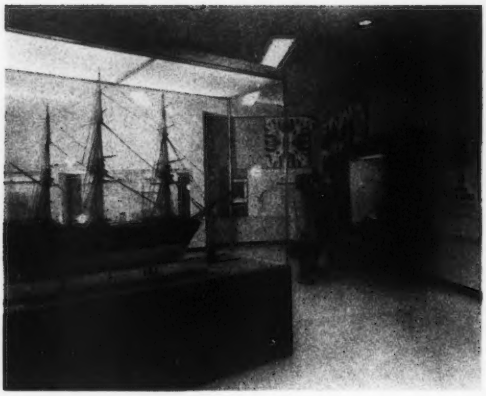


Fig. 8

Fig. 9

campers about fire, for example, are put in Visitor Center lobbies rather than in the exhibit rooms.

Still another way to select exhibit subjects is to pick interesting items from the field of general nature study such as the identification of the more conspicuous birds and flowers or the life history and habits of common mammals. This method also misses the essence of the park. All these approaches through index exhibits, principles exhibits, the display of the unique and unusual, ecological exhibits, conservation exhibits, and nature study exhibits have merit. They have been used singly or in combination to produce fine park museums that have served visitors well for many years. Park museums developed from these points of view can hardly be called site museums. "Trailside museum" is a better name for them and has been long in use. One of their honored prototypes is the Bear Mountain Trailside Museum in which The American Museum of Natural History played the guiding role. These museums are best suited to serve municipal and state parks, in which nature recreation is a dominant function.

Looking at the problem of selection from the standpoint of a site museum, we recall first that every National Park has been set aside to preserve certain superlative features. The primary value of the park lies in its outstanding features. Identify and analyze these and decide what help visitors need to understand them and to appreciate their significance. Then design your museum exhibits to give visitors this help. The methods were recommended a generation ago when park museums were being built as an experiment by the American Association of Museums with the aid of the Laura Spelman Rockefeller Memorial, but we have sometimes lost sight of them. The resulting museum may have principles ex-

Fig. 11

hibits, ecological exhibits, and so on, but it will have the attributes and advantages of a site museum.

An example of a natural history site museum is the one opened in the new Visitor Center at Grand Canyon National Park in June, 1957. Its exhibit subjects were selected by an analysis of the principal values visitors may find in the major features of the park. These values are outlined with examples in the first exhibit as an introduction to the museum. For many visitors, certainly the greatest experience is the breathtaking natural beauty of the canyon. A site museum cannot ignore this value, but science exhibits must handle esthetics with humility if not with trembling. The second exhibit in the Grand Canyon museum merely points out by means of natural color photographs that the canyon changes in appearance as the day progresses and as weather varies. The implication is that visitors need to take time enough on the canyon rim to watch its changing moods. One look is not enough, although people may drive

Fig. 8. Yorktown Visitor Center, Colonial National Historical Park. A park historian shows museum visitors naval relics salvaged from the river.

Fig. 9. Yorktown Visitor Center, Colonial National Historical Park. General Washington's sleeping tent is pitched again at Yorktown, in the museum.

Fig. 10. Yorktown Visitor Center, Colonial National Historical Park. When visitors go from the museum to Surrender Field, they carry a mental picture of the great event.

Fig. 11. Visitor Center, Pipestone National Monument. Visitors walk through the museum on their way to the historic quarries.

Fig. 12

Fig. 13

two thousand miles to see the spectacle and not realize this fact. If you say that this is an exhibit designed to influence action, to persuade, we stand accused. There is one type of persuasion that is legitimate and necessary in site museums. Visitors are continually encouraged to go outside to see and experience the features about which the exhibits tell. Another value derived from the park features is a realization that the great chasm was cut by the familiar processes of erosion. An exhibit on the power of running water uses a recording of the rapids' roar, sand- and river-polished boulders from the canyon bottom, and comparative photographs that show how big the canyon actually is. One of the most important features of the park is the unequaled stratigraphic section revealed in the canyon walls. The value of this for most visitors is less in the detailed account of earth history that can be read in the rocks than in the concept of the continuing action of geologic forces. Four dioramas of ancient landscapes are paired with cases of specimens presenting the evidence on which each is based. They emphasize the ideas of vast lengths of time during which there have been continued slow movements of the earth's crust, resulting in great changes of environment and life on the area that is now Grand Canyon. Time-movement-change form the main geological theme of the museum, and each illustration is linked specifically to features of the canyon. This succession leads logically to present-day environments in the park. The principal values in the biological features of Grand Canyon seem to be ecological. One stands in a forest on the canyon rim and looks down into a desert. The contrast is striking. In the museum the series of biological exhibits defines and analyzes these two communities—the rim forest and the desert within the canyon. One panel explains how the canyon produced the conditions

Fig. 15

under which each of the communities lives. Other exhibits illustrate the adaptations of life to these conditions, and how the equilibrium can be upset by natural events or human interference. The final set of values treated in the museum involves human responses to Grand Canyon. For many men the canyon has been a challenge. Prehistoric Indians risked their necks to hide little animal images in caves on the sheer canyon walls. Spanish discoverers tried to climb down into the gorge. John Wesley Powell and his companions dared to go through the unexplored canyon in rowboats. People still accept the challenge in their individual ways. These historic values are illustrated by specimens, dioramas, old maps, pictures, and quotations. To the degree that the Grand Canyon museum is successful, it demonstrates that the site museum concept works for scenic National Parks.

The new museum in the Canyon Visitor Center, Yellowstone National Park, is another example. Its subject is the Grand Canyon of the Yellowstone, near which it stands. Exhibits explain how the canyon was formed,

Fig. 12. Visitor Center, Pipestone National Monument. Exhibits near the museum entrance help answer visitors' questions.

Fig. 13. Visitor Center, Fort Caroline National Memorial. The park historian talks to school classes and other groups in the loggia.

Fig. 14. Visitor Center, Fort Caroline National Memorial. An electric map helps to explain fateful maneuvers.

Fig. 15. Visitor Center, Fort Caroline National Memorial. Eyewitness accounts come to life in a diorama of the surprise attack on Fort Caroline.

Fig. 16

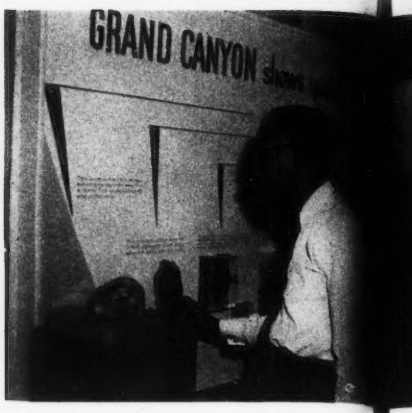


Fig. 17

the nature of the colored rock for which it was named, the role of the canyon and adjacent features as an environment for wildlife, and the effect of the canyon on people. The treatment of subject matter is quite different in the two canyon museums, but both take good advantage of proximity to the site, restricted scope, specific relation of exhibits to site features, and small size.

Emphasis on the superlative features of a park does not solve all site museum problems. The features are not only the proper subjects for the exhibits; they are in a real sense the prime exhibit specimens. What curator of geology would not like Old Faithful, Blue Glacier, or Devils Tower among his displays! It has often been said that the park itself is the museum, but this statement raises a question. Inside the park museum we must work with exhibits of ordinary dimensions. Can we do without specimens indoors on the strength of those unusually fine ones outside? Park museums often do install exhibits that contain no specimens, exhibits that might be called elaborate illustrated labels. These have been criticized from time to time by museum workers and laymen. We know that, while museums may exhibit ideas, the vitality and validity of their presentation depend principally on the original objects that are used to illustrate and support the ideas. A museum without specimens is a contradiction in terms. Yet take the museum at Abraham Lincoln National Historical Park, to be opened within the next three months. Its purpose is to assist in interpreting Lincoln's birthplace. The subject is moving and important, but there are few historical objects that would help people understand or appreciate the event. Pictures, maps, a diorama, labels, and two or three specimens can state the basic facts, fill in the background, and prepare visitors to see the birthplace. In this instance the

Fig. 19

site as an original object justifies a museum almost without specimens in the usual sense. Similarly, diagrams of geyser mechanics are a legitimate exhibit in the museum at Old Faithful. A site museum is sometimes weak in specimens for another reason. The museum is responsible for interpreting the park to visitors. Sometimes significant aspects of the story it must tell are unrelated to objects. The museum cannot ignore the ideas because they are hard to exhibit, and specimens displayed with these ideas would be an intrusion. There is such an exhibit in the Jamestown museum called "Stirrings of an Independent Spirit" and another on Virginia's loyalty to the Stuart kings. John Peter Zenger's fight for a free press as told in Federal Hall Memorial on the site of his imprisonment and trial includes numerous ideas to which specimens add little. On the other hand, park museums sometimes build exhibits that lack specimens from necessity. We are late comers to the site, and the specimens that

Fig. 16. Visitor Center, Grand Canyon National Park. The building stands beside East Rim Drive, but well back from the canyon edge where it does not intrude on any scenic vistas.

Fig. 17. Visitor Center, Grand Canyon National Park.

Fig. 18. Visitor Center, Grand Canyon National Park. Diorama of a Permian delta. The plant and animal species shown in the scene are represented by Grand Canyon fossils displayed in an adjoining case.

Fig. 19. Visitor Center, Grand Canyon National Park. A model and specimens help interpret an important factor of two biological communities compared in adjacent exhibits.

Fig. 20

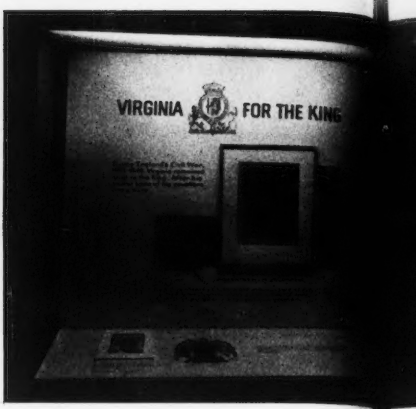


Fig. 21

would illustrate the story to perfection are already in other museums or in private hands. A site museum is not free to change its subject content to fit its collections, and the collections, like the exhibits, must be pertinent to the site. It should be stated that other museums repeatedly have been generous in returning specimens for display at the park from which they came. Perhaps a sound policy for site museums is to consider park features as their best specimens and to relate the displays inside the museum to them as closely as possible; then to use supplementary specimens in the museum exhibits, fully and frequently, whenever they help people understand the significant park features; but to avoid the display of specimens that, though interesting, do not contribute to this understanding. The justifiable criticism of park museums for their sparsity of specimens should be met by increased ingenuity and imagination in the use of original objects to explain or prove the meaning of park features, not by the adoption of less rigorous standards in the selection of subject matter.

The relation of park features to site museums poses another problem. The features to be interpreted are out in the park. Why not put the exhibits out where people can see both at the same time? Why collect the exhibits together in a museum? Roadside and trailside exhibits are ideal interpretive devices for parks in some respects, and their use is growing. If you visit Mount Locust, an historic house museum on the Natchez Trace Parkway, you will find beside the parking area an open shelter containing a half dozen exhibits telling the story of the house and its relation to the old Trace. Then you walk up a path to see the restored building and its furnishings. When driving over the Stevens Canyon Road in Mount Rainier National Park, you may stop beside Box Canyon. A little series of exhibits uses models, photographs, and common-

Fig. 23

place specimens to explain the salient features of the canyon and its surroundings. From the exhibit shelter a trail leads to a footbridge crossing the narrow gorge. Plans are ready for a whole series of integrated exhibits along the roads and trails of Everglades National Park, Bryce Canyon National Park, and Richmond National Battlefield Park. Others will follow. When these outdoor exhibits are directly associated with significant park features, they are in step with the site museum concept. Features, museum, and wayside exhibits supplement one another, and each makes its unique contribution to the whole interpretive effort. Roadside and trailside exhibits have their limitations. Ordinarily they cannot provide adequate protection for valuable specimens, so cannot use them. They can rarely present the park story in the orderly sequence required to catch the over-all picture, because the site features are not so arranged. They must be placed where they will not interfere with the impact of the features themselves. Therefore they do not replace the museum, but extend it. The site museum still needs to present the story as an organized, comprehensible whole. Outdoor exhibits are costly to maintain, because

Fig. 20. Canyon Visitor Center, Yellowstone National Park.

Fig. 21. Jamestown Visitor Center, Colonial National Historical Park. Specimens are not needed to illustrate this idea.

Fig. 22. Jamestown Visitor Center, Colonial National Historical Park. Another exhibit tells an important story that specimens cannot illustrate.

Fig. 23. Box Canyon roadside exhibit, Mount Rainier National Park. One unit for installation in the Box Canyon shelter.

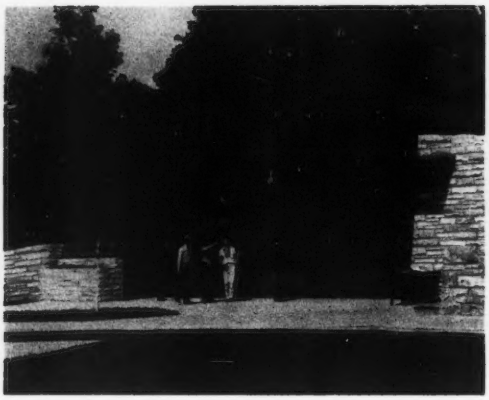


Fig. 24

Fig. 25

they are exposed to weather and vandalism. For this reason developments are likely to move in two directions. Some exhibits are being grouped in open shelters for protection from sun and rain. Others are being simplified so they can be produced in more durable materials and maintained by park work crews. They become elaborate signs cast in metal or routed in wood or aluminum. There are instances of roadside exhibits that are not linked directly with features of the park. They are like soapbox orators who try to collect an audience by their own attraction. They may serve a useful purpose, but are at odds with the idea of site interpretation.

We have examined the meaning and implications of a new name for a category of museums. Thinking of National Park museums as site museums helps us to keep on the track and to solve some of our problems. The term should become part of our working vocabulary. If we plan to accept the name, some speculation on its genealogy may be permitted. In October 1949 UNESCO assembled in Paris a group of experts on historical sites and ancient monuments. One section of the report of the meeting (*Museum,* vol. 3, no. 1, 1950) concerned the nature of and need for site museums. The lack of an apt name for such museums as recently as nine years ago is conspicuous. They were referred to as "museums of the monument." About a year later an article by Carl P. Russell of the National Park Service (*Museum,* vol. 4, no. 2, 1951) described the Yosemite National Park Museum. He quoted Hermon Carey Bumpus, a former Director of The American Museum of Natural History, on the idea of a trailside museum. The French translation of the article (on page 86) rendered "trailside museum" as *le musée de site.* The next year Robert T. Hatt, Director of the Cranbrook Institute of Science and formerly of The American Museum staff, wrote for *Museum* an article on educational pro-

Fig. 27

grams of natural history museums in the United States (vol. 5, no. 1, 1952), including a brief discussion of Bear Mountain and other trailside museums. Again the French translation was *petits musées de site.* The next reference we found was Dr. Allan's article in *Museum* three years later on museums at historic sites in Scotland. He used the term "site museum" in English, with the somewhat different and precise meaning that gives it particular relevance to our work.

The National Park Service is in the third year of MISSION 66, a ten-year program to develop and staff the parks so they may be safely used and enjoyed by millions of people while being preserved in full value for future generations. As part of the program, new Visitor Centers are being built in many of the parks, which will house about a hundred new site museums, each of which is a part of an integrated interpretive program for its park. Typical programs combine audio-visual presentations, publications, and personal interpretive services with the museums. The exhibits for the small, widely scattered museums are being planned and prepared in the Division of Interpretation by the staffs of two central laboratories, one in Washington, the other in San Francisco, in cooperation with Service naturalists and historians and park staffs. Most of our problems we share with urban museums. Some of our peculiar ones are noted here.

Fig. 24. Roadside exhibit shelter, Cumberland Gap National Historical Park.

Fig. 25. Roadside exhibit shelter, Arches National Monument.

Fig. 26. Routed wood marker, Natchez Trace Parkway.

Fig. 27. Routed aluminum marker, Grand Canyon National Park.

CURATOR BOOK REVIEWS

The Modern Museum and the Community. *Edited by Stephan F. de Borhegyi. Norman, Oklahoma, Special Publication No. 1, Clearing House for Western Museums, 1958, 34 pp., illustrations, no price.*

Day is dawning in the museums. Not only is the old pattern of displays and exhibitions rapidly becoming a thing of antiquity, but the museologists are emerging from their storerooms and giving a very vocal account of themselves. The role of museums in education and in the society at large is being examined, and what seems to be a host of suddenly discovered problems is being debated, discussed and, possibly, solved. The regional publications of the museum associations grow thicker and more elaborate, and elegant new publications such as CURATOR stimulate museological thought and help to create a heightened sense of mission and to develop a growing sense of identity among museum personnel.

It is difficult or impossible to be suspicious of such sincere soul-searching, for it is obvious that museums, like other institutions, can improve their functions and their status only if they evaluate their resources and define their objectives. For anyone who wants to see what modern museums are doing and to get an idea of the direction in which they hope to move or are already moving, this little pamphlet is an excellent introduction. Of the nine papers presented, five discuss and describe programs of particular types of museums (community, university, state, national, and specialized), three introduce particular aspects of activities that apply to a variety of museums, and one is a very general critique of the world of museums at large.

At the risk of devoting too much space to such a short publication, I would like to give some idea of the contents of the various papers.

The first paper, "The New Museology: A Call to Order," by George Mills and Richard Grove of the Taylor Museum of the Colorado Springs Fine Art Center touches a recurrent theme: that we neither train nor pay museum personnel for their jobs. The authors feel that the task of the art museum is particularly difficult, but they draw upon the concept of culture to conclude that people can be educated. Some of their points I admit I do not understand, although it is clear that they question the "leadership of science" in (I think) reaching towards an understanding of man. Their contention is that modern museums are floundering without purpose, and they look upon this situation with pleasure because then, "We are free to grasp the living implication of our specialized studies and form a whole picture of our struggles with experience." This sounds profound, but I do not understand it. I do understand, however, their summary questions that they believe every museum should ask itself.

"Some Problems of Community Museums" by W. Stephen Thomas of the Rochester Museum of Arts and Sciences is a straightforward examination of some of the specific problems that relate to the broad purpose of a museum. He never loses sight of the special functions of a community museum, however, and examines its role as a community center, the problems of permanent exhibits versus temporary displays for particular purposes, the responsibility of the museum to community groups and to individuals, and the role of the museum as a medium for liberal and continuing education. He does not suggest a specific program, but he recognizes the fundamental virtues of flexibility and the ability to effect a change of pace. His comments on means for developing support from business and industry, the emphasis upon interpretation, his desire for greater articulation with school education, and his suggestion for temporary exhibits that can be exchanged between museums will all be read with interest and appreciation by staff members of any kind of museum.

"The University Museum and the Community" by Alice J. Turnham of the McGill University Museums points out that in 1942 there were 700 museums located in 400 colleges and universities in this country. Most of these are musty warehouses with insufficient staff personnel, inadequate funds, and a deadly orientation towards research rather than education. As she says, "Too much erudition and too dry an atmosphere [produce] much the same effect as too little rainfall on a garden crop: all root, with little foliage. Good public relations are necessary for the continuation of research."

As do the other writers here, she analyzes what the public is for her kind of museum and recognizes responsibility to the campus community, the professional community of scholars outside the university, and the average citizens of the local community. Fundamentally she would like the university museum to be what she calls an "orientation center," where students and laymen alike would be introduced to the vast areas of learning that lie beyond their immediate horizons.

"The State is Our Community" by Arnold B. Grobman, Director of the Florida State Museum, is less concerned with the basic aims of museums generally and concentrates upon the functions of the state museum. These, in his case, he sees as limited by a "moral restriction" to concentrate upon subjects specifically related to the state of Florida. With a heterogeneous audience of a large population, the subject matter of the museum becomes more simply defined as "anything relating to the state."

Research is conducted largely through co-

operation with other state agencies, and an attempt is made to reach the entire population of the state by means of traveling exhibits, a series of newspaper articles, and as a "cultural experiment station."

John C. Ewers, Planning Officer of the Museum of History and Technology of the United States National Museum, contributed an article on "The National Museum's Services to the People." He recognizes the special kinds of problems that arise from the encyclopedic breadth of the large general museum and also deals with those that confront any museum. He regards teaching through the display and interpretation of original objects as the distinctive trait of the museum and reports on the modernizing of the United States National Museum in its attempt to make the original objects available to all people for their various purposes. In common with most of the other articles, an attempt is made to analyze the public that should be served. Beyond serving as "the cultural representative of the nation," Ewers feels the large museum should serve three classes of visitors: the millions of sightseeing tourists who have no particular needs; the thousands of students, collectors, and hobbyists who want extensive series of their specialties; and the hundreds of scholar-specialists who are interested in detailed analyses of particular collections. He asks the eternal question, "Can the exhibits and other services of the museum meet the different needs of these three groups without frustrating the novice with technicalities incomprehensible to him on the one hand or under-stimulating the amateur or professional expert with gross simplifications on the other?" Without offering it as a solution, he then circumvents the exhibit by inviting both the collectors and the specialists to work in the "classified reference collections" and concentrates upon the designing of exhibits that will do something for the more casual visitors. One of the newer problems of museology is touched upon as Ewers considers the possibility of utilizing original objects and museum display techniques to convey "such important abstract aspects . . . as the establishment and development of our traditional freedoms." He also comments on the responsibility of the United States National Museum as the cultural representative of its country in fostering international cooperation and understanding through the circulation of traveling exhibitions in this country and the preparation of special exhibits to be shown abroad.

A success story of a specialized museum which has reached an estimated six million people in one year with a complex and abstract subject is told by Charles G. Wilder, the Director of the American Museum of Atomic Energy at Oak Ridge, Tennessee. With an exclusive orientation towards education instead of collecting and research, or of either, this museum has seized every opportunity to participate with schools, universities, chambers of commerce, and other institutions to set up science fairs and present demonstrations or introduce their exhibitions to the public. Surely their traveling exhibits, which cover approximately six thousand square feet of display space and are transported by large tractor trailers and accompanied by a demonstration crew, represent one of the most modern examples of museum extension service. Any curator who is truly interested in reaching the audiences beyond his museum doors might do well to study the American Museum of Atomic Energy as an example.

The remaining three articles discuss special areas of museum activity rather than particular types of museums. Theodore L. Low, Director

of the Department of Education of the Walters Art Gallery in Baltimore, in his article "The Museum, Television, and the Community" presents a simple, sensible view of museum participation in television presentation. As do the other authors here, he examines his potential audience and finally decides to concentrate upon accidental viewers and those with "fringe interests." This decision stems from his conviction that the television program must be used as an end in itself for education and not as a device to bolster museum attendance. Those who are interested in museums will visit them personally, but he feels that a large number of people who are only casually interested and who never come to museums can be reached in their homes. He also presents an excellent summary of standards for television programs which is worth quoting: "This means, of course, that museum programs should have certain characteristics not always easy to attain. They should be intelligible to the uninitiated and not wrapped around with professional jargon. They should have showmanship to a degree which will attract the chance viewer but which exists not for its own sake but to enhance the material on display. They should be informal and pleasing but never at the cost of lowered standards and scholarship." This article should certainly be read by the many museum staff members who are about to be involved in television presentations.

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Robert T. Hatt, Director of the Cranbrook Institute of Science, discusses exhibit design in "Anthropology at a Glance." As are Ewers at the United States National Museum and a growing majority of staff members of natural history and science museums throughout the country, he is concerned with education rather than with collecting. To this end he explains very lucidly some of the general principles or problems which their exhibits deal with and the manner in which they have been presented. The article is too short to deal with this problem in any detail, but those museum curators who are looking for suggestions to help them break away from or add spice to exhibits that concentrate upon typology or distribution may find some valuable suggestions.

As a final evaluation of this publication, I would say that very little that is new, radical, or different is presented here. On the other hand, it is a very valuable summary of what is happening in museums today. Almost all the programs that are described have been in development for fifteen years or more, but their effect has to a considerable degree been restricted to the larger museums, and it is only recently that their impact has been felt on a much broader scale throughout the country.

The whole tendency towards self-examination in an effort to define the objectives of exhibition, collection, and research can hardly fail to produce results that will be beneficial to education, to the museums, and to the sciences and arts they represent. I would strongly suggest that all those curators who are struggling to convince their universities or their communities that museums can be a vital force in the cultural and intellectual life of their areas immediately procure one or several copies of this little pamphlet and send it to their trustees or councilmen as a present at some Christmas or Easter—it will never be too late. The materials may well open the eyes of interested or disinterested laymen and will certainly give museum personnel an opportunity to say, "I told you so." Museums are here to stay.

ANDREW H. WHITEFORD
Logan Museum, Beloit College

How and Where to Look It Up, *A Guide to Standard Sources of Information. Robert W. Murphey. New York, McGraw-Hill Book Company, 1958, 721 pp., $15.*

One definition of an expert is "a man who knows where to find everything he does not immediately know." Robert W. Murphey, by writing this massive and invaluable guide to the information of the world, has made it possible for the average person to become an expert.

The book covers every imaginable area of interest for research. Its subject and alphabetical arrangement makes it easy for the user to find out how to locate the information he wants, where to find it, and how to evaluate and employ it. It is thoroughly indexed and cross-referenced and is as easy to use as a dictionary.

"How and Where to Look It Up" is divided into four parts. The first part is an introductory section describing the general format of reference works and how they can best be used. There is also a discussion of libraries and of basic research methods. The student will find Chapter 4 particularly useful, as it lists sources of information helpful in the preparation of research papers.

Part II describes the various general types of reference sources—encyclopedias, dictionaries, annuals, guides to books and periodicals, and directories. Sources relative to the various branches of the government, associations, and commercial firms are likewise included in this section. Another chapter deals with sources of graphic information such as charts, graphs, slides, and filmstrips.

Part III lists specific sources of information about people, places, and things, each section being divided into appropriate subsections.

Part IV is the index to this book and lists both major and minor headings for which each cited work may prove a useful source, as well as giving references to titles of works cited.

To find a specific source for a specific subject or item of information, you look first at the Table of Contents. Here you can locate both the chapter in which the subject is covered as well as the section of the chapter in which it probably appears. If you do not find what you seek, look in the Index.

For institutions such as museums, which find it necessary to know (or know where to find) information about the entire world, this is one of the most useful and well-planned "where-to-find-it's" that has emerged in many years. The researcher, the librarian, the writer, the public relations person, the teacher, the secretary, the student, or the artist can find room on his bookshelf for a volume that will save him much time and effort in doing his work.

W. A. B.

PICTURE CREDITS

Pages 114–115, Naturhistoriska Muséet, Göteborg; page 117, The Berkshire Museum, Pittsfield, Massachusetts; pages 118–119, Biologiska Muséet, Stockholm; pages 120–121, Musée du Duc d'Orléans, Paris; pages 122–123, Naturhistorisches Museum, Bern; page 125, British Museum (Natural History); pages 126–127, Peabody Museum of Natural History, Yale University; pages 142–143, the New York Historical Society; pages 154, 156, the Solomon R. Guggenheim Museum; pages 163–168, Chicago Natural History Museum; pages 172–179, 180 (Fig. 17), 181 (Fig. 19), 182, 183, 184 (Fig. 25), 185 (Fig. 26), the National Park Service; pages 180 (Fig. 16), 181 (Fig. 18), 185 (Fig. 27), Grand Canyon National Park; page 184 (Fig. 24), Department of Public Relations, Frankfort, Kentucky; all others, The American Museum of Natural History.

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James L. Swauger, of the Carnegie Museum, in his article, "The Community as a Cash Customer for Museum Services," presents a museum activity that may be completely new to the majority of museum personnel but that probably has been carried on in an intermittent fashion by many institutions. At the Carnegie Museum the specialized knowledge and techniques of the staff have been hired for private biological surveys, the recording of data from old tombstones, the preparation of a display on local prehistory for a bank, salvage archeology for the state, and the preparations of an exhibit dealing with intergroup relationships for the United Steel Workers of America. It is the opinion of the author that participation in these services has not only brought some needed funds into the institution but has also given the members of the staff opportunities for research, has extended its services to the community, and at the same time has strengthened its relationships with it.

Robert T. Hatt, Director of the Cranbrook Institute of Science, discusses exhibit design in "Anthropology at a Glance." As are Ewers at the United States National Museum and a growing majority of staff members of natural history and science museums throughout the country, he is concerned with education rather than with collecting. To this end he explains very lucidly some of the general principles or problems which their exhibits deal with and the manner in which they have been presented. The article is too short to deal with this problem in any detail, but those museum curators who are looking for suggestions to help them break away from or add spice to exhibits that concentrate upon typology or distribution may find some valuable suggestions.

As a final evaluation of this publication, I would say that very little that is new, radical, or different is presented here. On the other hand, it is a very valuable summary of what is happening in museums today. Almost all the programs that are described have been in development for fifteen years or more, but their effect has to a considerable degree been restricted to the larger museums, and it is only recently that their impact has been felt on a much broader scale throughout the country.

The whole tendency towards self-examination in an effort to define the objectives of exhibition, collection, and research can hardly fail to produce results that will be beneficial to education, to the museums, and to the sciences and arts they represent. I would strongly suggest that all those curators who are struggling to convince their universities or their communities that museums can be a vital force in the cultural and intellectual life of their areas immediately procure one or several copies of this little pamphlet and send it to their trustees or councilmen as a present at some Christmas or Easter—it will never be too late. The materials may well open the eyes of interested or disinterested laymen and will certainly give museum personnel an opportunity to say, "I told you so." Museums are here to stay.

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How and Where to Look It Up, *A Guide to Standard Sources of Information. Robert W. Murphey. New York, McGraw-Hill Book Company, 1958, 721 pp., $15.*

One definition of an expert is "a man who knows where to find everything he does not immediately know." Robert W. Murphey, by writing this massive and invaluable guide to the information of the world, has made it possible for the average person to become an expert.

The book covers every imaginable area of interest for research. Its subject and alphabetical arrangement makes it easy for the user to find out how to locate the information he wants, where to find it, and how to evaluate and employ it. It is thoroughly indexed and cross-referenced and is as easy to use as a dictionary.

"How and Where to Look It Up" is divided into four parts. The first part is an introductory section describing the general format of reference works and how they can best be used. There is also a discussion of libraries and of basic research methods. The student will find Chapter 4 particularly useful, as it lists sources of information helpful in the preparation of research papers.

Part II describes the various general types of reference sources—encyclopedias, dictionaries, annuals, guides to books and periodicals, and directories. Sources relative to the various branches of the government, associations, and commercial firms are likewise included in this section. Another chapter deals with sources of graphic information such as charts, graphs, slides, and filmstrips.

Part III lists specific sources of information about people, places, and things, each section being divided into appropriate subsections.

Part IV is the index to this book and lists both major and minor headings for which each cited work may prove a useful source, as well as giving references to titles of works cited.

To find a specific source for a specific subject or item of information, you look first at the Table of Contents. Here you can locate both the chapter in which the subject is covered as well as the section of the chapter in which it probably appears. If you do not find what you seek, look in the Index.

For institutions such as museums, which find it necessary to know (or know where to find) information about the entire world, this is one of the most useful and well-planned "where-to-find-it's" that has emerged in many years. The researcher, the librarian, the writer, the public relations person, the teacher, the secretary, the student, or the artist can find room on his bookshelf for a volume that will save him much time and effort in doing his work.

W. A. B.